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Time For A PC Tune-Up

*Improve Speed,
Performance & Reliability*

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& DEVICES

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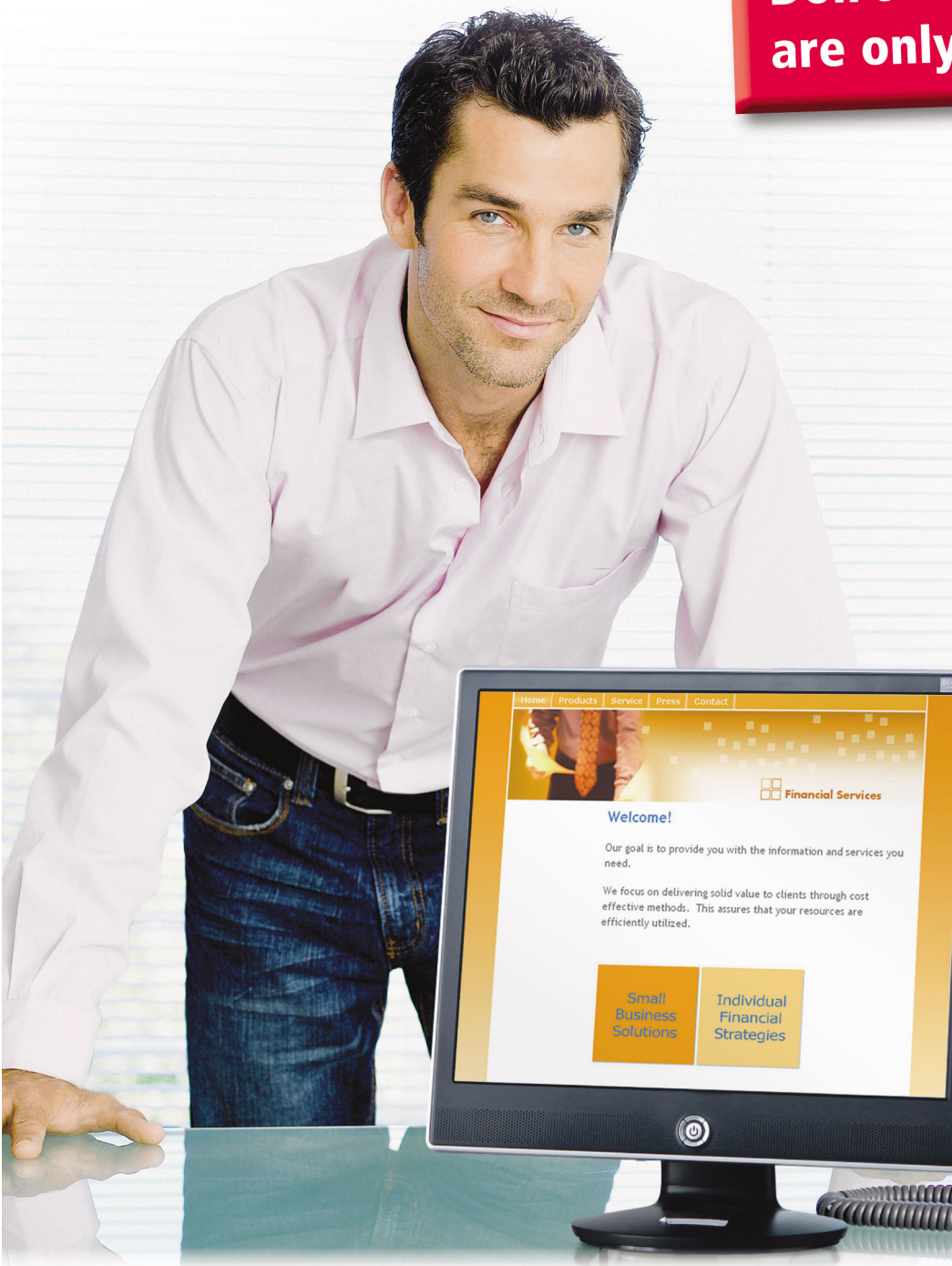
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Staff Picks

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Back Up Your Gmail Messages

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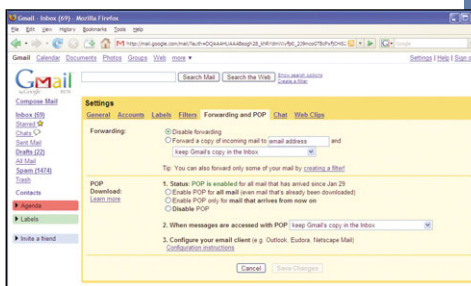
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Security

Lock Down The PC

HTML

Remove Tags For CSS, Part III



Gmail

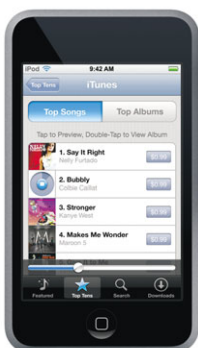
Consumer Electronics

We tell you what you really need to know about various types of consumer electronics products. This month we cover:

Cell Phones

HDTVs

MP3 Players



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EDITOR'S NOTE

Ah, early January. The time of year when we gather around a roaring log fire, reminisce about the days of yore, make toasts to friends old and new, and resolve to improve ourselves. This time, we know for sure we can stick to those resolutions. We'll start that new diet as soon as we've had just one more helping of Aunt Zelda's holiday mincemeat pie.

Resolutions for personal growth may be easier to make than they are to keep, but that's no reason not to strive for self-improvement. Fortunately, it's a lot easier to get your PC in shape than it is to shave inches off your waist. An annual computer "tune-up" will trim excess files and background processes, ferret out malware and other errant programs, and clean up damaged system files that may be hampering overall performance. This combination of cleaning, purging, and updating will free up precious disk space and memory, revitalize your operating system, and speed up your computer.

In this issue, we show you step-by-step how to pep up a tired, out-of-shape PC. You'll learn how to optimize your storage, memory, operating system, applications, and peripherals. We may not be able to assist you with any personal fitness resolutions you may have made for the coming year, but follow our guidelines and by the time you're done reading, at least your computer will be running like new once again.

Here's to a very happy and successful new year—starting off with a rejuvenated PC.

Ron Kobler
Editor-in-Chief



Now Available On Newsstands . . .

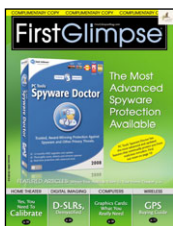
Computer Power User Next-Gen CPU Showdown

Both Intel and AMD have released new desktop processors, and they're vying for a spot inside your next computer. This month's *CPU* delivers all the information you need to make the right choice.



PC Today Holiday Gear

In *PC Today*'s first-ever holiday gift guide, you'll get a look at the newest mobile technology products for work and play, including notebooks, smartphones, cases, and entertainment devices.



First Glimpse Streaming Audio & Video

Ever want to watch video from your PC on your HDTV? How about listen to your music library throughout your house during a dinner party? If you set up a home entertainment network, you can do this and more. This month, find out how to stream audio and video and enjoy your media wherever you want, whenever you want.

Corrections/Clarifications

November 2007 issue; page 50; Tweak No. 5: Bypass The Windows' Welcome Screen

The effectiveness of this tweak is limited to a specific version of Microsoft's .NET framework on WinXP (.NET 1.1). Updates since that time have patched the framework and disabled the effectiveness of this fix. If you have this patch installed the fix will not work, and you will get the Welcome Screen no matter what—even the control userpassword2 utility has no effect on the welcome screen splash; it will still appear briefly in the automated login process.



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DESKTOPS & LAPTOPS

Mobile Once Again Means “Mobile”

In recent years, notebook manufacturers have gone to excessive lengths to take the mobile out of “mobility.” With ever-expanding screens and processing power that rivals that of desktop PCs, even the average notebook can serve as an adequate desktop replacement.

But what about users who actually want a mobile computer? Those are the users who have inspired the new Asus Eee PC (eepc.asus.com), a truly mobile notebook that weighs just 2 pounds and includes a 7-inch, 800- x 480-pixel screen. The standard Eee PC 4G and 8G models include 4GB and 8GB of solid-state storage, respectively, as well as 512MB and 1GB of DDR2 (double-data-rate 2) RAM, respectively.

The device uses an Intel Celeron M ULV 900MHz processor and includes three USB 2.0 ports, 802.11b/g Wi-Fi, a Linux operating system, and it features 3.5 hours of battery time. While these specifications might not blow larger models out of the water, perhaps the price tag will: At press time, the Eee PC 4G was retailing on Newegg for just \$399.99.

The Eee PC features a one-click intuitive interface that provides quick access to email, videoconferencing, live messaging, and online phone capability. OpenOffice.org software gives users the ability to open, edit, and create documents, spreadsheets, presentations, and databases that are compatible with Microsoft Office.

For those looking to go even more mobile, Nokia recently released its N810 Internet Tablet (\$479;

www.nokia.com), featuring a TI OMAP 400MHz processor; a 4.13-inch, 800- x 480-pixel display; 128MB of DDR RAM; and 256MB of flash memory. Also included is up to 2GB of internal memory and support for miniSD and microSD memory cards. The N810 boasts a continuous usage of up to four hours, music playback up to 10 hours, and standby time up to 14 days.

“The Nokia N810 packs the power of a traditional computer into a pocket-sized format. Its open-standard technology accelerates the convergence of multiple functionalities and services into a single device,”

said Ari Virtanen, Nokia’s vice president of convergence products. “Our new Nokia N810 offers users a true Web 2.0 experience in a compact, stylish, yet affordable package—it connects people to what matters to them.”

The N810 is essentially designed for users looking to access online resources on the go, with included Wi-Fi capability, Bluetooth connectivity, and integrated GPS (global positioning system). Also included is a slide-out, QWERTY keyboard with a backlight for use in dark areas. The keyboard features a navigation pad to the left of the keys. ■



The display on the new Nokia N810 slides up to reveal a full QWERTY keyboard, complete with a navigation pad. Integrated GPS (global positioning system) functionality makes the device an effective weapon for travel warriors.

STORAGE

Hitachi Goes Green With New Drives

Even as computers enter new realms of performance, manufacturers are under pressure from all sides to go green. This move toward improved energy efficiency is causing a rush among companies to create devices that use less power. Hard drives are a particularly hot target for the green movement, because many of them run incessantly, even when they're not actually in use.

Hitachi (www.hitachi.com) is looking to change the hard drive's reputation as an energy hog. The company's new Deskstar P7K500 line of desktop hard drives features a wealth of energy-saving technologies designed to reduce the total power consumption of the drives. One of these is Hitachi's HiVERT technology, which first appeared in the company's



Travelstar mobile products. This technology allows efficient voltage conversion through the increased use of switching regulators in place of linear regulators.

Also included are Hitachi's Advanced Power Management capabilities, which contribute to the drive's idle power utilization of 3.6 watts on the 250GB model and 4.8 watts on 320GB or greater models. These capabilities include unload idle, which delivers 11% greater power savings over idle mode by safely unloading heads to the ramp and shutting off the servo.

Also included is low rpm idle, which delivers a power saving increase of 44% over idle mode by implementing the unload idle features plus reducing spindle motor rpm. ■

DISPLAYS

It's HDMI, Not Rocket Science

Beyond the obvious hit to your wallet, buying an expensive display can be a confusing experience. HDMI (High-Definition Multimedia Interface), with all of its variations, certainly doesn't help matters, but HDMI Licensing—the agent responsible for licensing the HDMI specification—has announced new guidelines that will help manufacturers accurately describe the HDMI functions of their products.

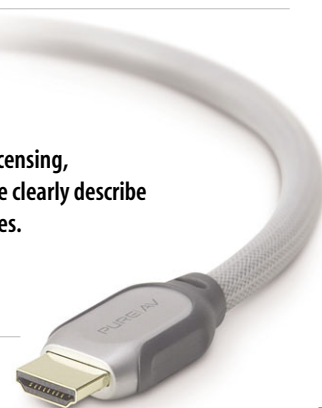
"To further support manufacturers, retailers, and installers in helping consumers make better-informed decisions, we have created a map of HDMI features with terminology that is easy to communicate," said Les Chard, president of HDMI Licensing. "With the new guidelines, the industry now has the means to do that more effectively."

Because HDMI has undergone multiple revisions since its initial release years ago and the functions added to each new release are optional, it's sometimes difficult to determine exactly which HDMI technology you're getting. But the new guidelines instruct that manufacturers must

include specific HDMI features enabled in their products, and they must also list the HDMI version number. The guidelines also establish minimum functionality that the HDMI-enabled device must deliver to users.

According to HDMI Licensing, this effort will help manufacturers, retailers, and others "accurately convey" HDMI-enabled features in high-definition CE (consumer electronics) and PC devices, such as Deep Color functionality, x.v. Color extended color gamut, and advanced audio formats. ■

Thanks to new guidelines from HDMI Licensing, future HDMI-enabled products will more clearly describe the HDMI abilities of display technologies.



PRINTERS & PERIPHERALS

Compact & Convenient Printing

We want convenience to go with quality when it comes to photo printing, and HP aims to meld both traits in its new Photosmart A626 Compact Photo Printer (\$179.99; www.hp.com).

In addition to a wide variety of photo-specific options, the A626 features a 4.8-inch color touchscreen that provides easy access to basic printing functions. For example, users can remove red-eye, adjust brightness, and even make subjects more slender, all without manipulating the photo on a PC.

Photos can be printed in multiple sizes, including 4- x 6-inch, 5- x 7-inch, wallet, and panorama, and a stylus can be used to make notations or drawings on the pictures. Similarly, messages or captions can be added to pictures using an on-screen keyboard. Choosing a picture to print is as easy as scrolling through thumbnails and selecting a photo by touching it.

For printing on the go, the printer should fill the bill, weighing just 3.4 pounds and measuring 5.2 x 9.92 x 4.61 inches (HxWxD). An optional \$49.99 HP Bluetooth Adapter is available for wireless printing from Bluetooth-enabled camera phones and other devices. **I**



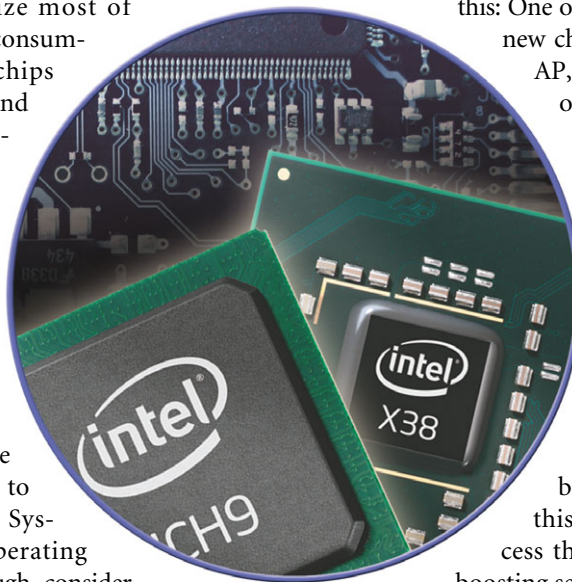
If you'd rather not sacrifice functions for convenience, consider HP's A626 Compact Photo Printer, which weighs just 3.4 pounds but includes a powerful touchscreen and other flexible features.

CPUs, CHIPS & CARDS

New Intel Chipset Goes Heavy On Innovation

Processors tend to monopolize most of the headlines in chip-related consumer news, but advances in these chips tend not to come in great leaps and bounds. New motherboard chipsets, on the other hand, can prove strikingly different from other chipsets on the market, and Intel's new X38 Express chipset is no exception.

In addition to support for DDR3 RAM and inclusion of dual 16x PCI (Peripheral Component Interconnect) Express 2.0, the X38 Express includes Intel's Extreme Tuning Utility, which allows users to make BIOS (Basic Input/Output System) changes from within the operating system. If that's not innovative enough, consider



this: One of the first motherboards sporting the new chipset, the Asus P5E3 Deluxe/WiFi-AP, features a Firefox browser running on an embedded Linux operating system, all integrated directly into the ROM.

Thus, in seconds, you can have your operating system up and ready to go, with Firefox (and all your saved bookmarks and other settings) waiting for your input. Naturally, the board supports other operating systems, as well, but for a quick Internet fix, this configuration can be handy. Developed by DeviceVM, this "instant-on" desktop doesn't access the computer's hard drives, in turn boosting security. **I**

DIGITAL MISCELLANEA

Pay Your Phone Bill & Never Pay Again

Tired of paying your phone bill every month? What if you could pay one more time and never pay again? That's what ooma (www.ooma.com) is offering with its VoIP (Voice over Internet Protocol) service, which costs \$599 for lifetime service. (Be sure to check online discounts, as the price was \$399 at press time.) This service includes unlimited calls in the United States to landline or mobile numbers.

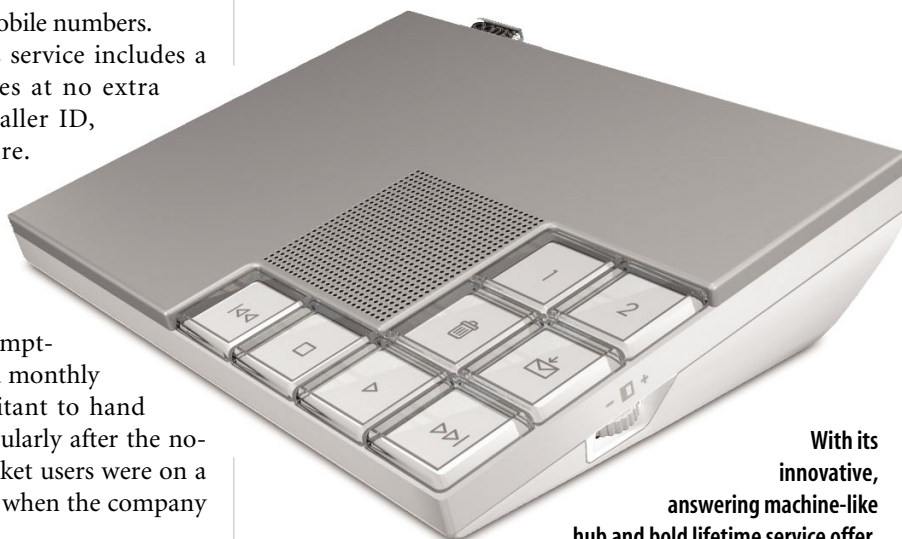
As with other VoIP services, ooma's service includes a wide range of bundled calling features at no extra cost, such as enhanced call waiting, caller ID, call blocking, do not disturb, and more.

Unlike other services, ooma's hub includes buttons similar to a standard answering machine, with buttons for accessing voicemail, switching lines, and more.

Although the service might sound tempting to people tired of paying high-priced monthly landline bills, others likely will be hesitant to hand over money for a lifetime service, particularly after the notorious SunRocket fiasco. Many SunRocket users were on a \$200 annual plan and were left in limbo when the company suddenly closed its doors for good.

ooma claims such a scenario won't happen, saying that, "We built our system from the ground up and seeded a

peer-to-peer network to make sure we keep quality high and costs low. Based on the enthusiasm of the marketplace and our financial backers, you can be confident that ooma is here to stay." ■



With its innovative, answering machine-like hub and bold lifetime service offer, ooma is hoping to lure phone customers who are tired of paying hefty monthly bills.

PROBLEM-SOLVER: TROUBLESHOOTING THE NEWS

My monitor goes black when I start a certain program (or a game).

If you're using updated graphics drivers, your problem is likely hardware-related. Some newer programs (particularly games) require plenty of power, and in underpowered systems, this drain can prevent enough power from reaching the graphics card. You might need to upgrade your power supply unit to a more powerful model.

I installed a new hard drive, but now my PC won't boot up (or won't turn on at all).

If your PC turns on with your old hard drive plugged in, try using a

different power connector with your new hard drive. Alternately, try using a power connector that has nothing else connected to it or a connector that's known to work with other devices. If your PC isn't turning on at all, your new hard drive might be shorting out the power supply, which could require a repair from a qualified technician.

I changed the paper type in my printer, but now my printouts are smeared.

Because most printers include settings for handling different types of paper (such as photo paper and plain paper), it's important that you modify those settings to reflect the

type of paper currently inserted in the printer. In many cases, this will fix smearing problems. Check your printer's manual for instructions on how to access the settings.

When my iPod is connected to my PC, the PC tries to boot directly from the iPod.

Consult your motherboard manual for instructions on changing the boot order in the BIOS (Basic Input/Output System) and make sure your primary hard drive is listed first. If this doesn't work, find and use the BIOS option for disabling legacy USB support.

iPhone Sparks Convergent Growth; Verizon Pays For Deception

The continuing evolution of convergent technology is bringing forth surprising movements in the consumer space, constant advances in mobile architecture, and not-so-surprising marketing ploys. Here's a look at recent news shaping this space.

- As mobile devices grow increasingly adept at bringing desktop capabilities to the road, map applications are receiving a direct boost. Marissa Mayer, Google's vice president of search products and user experience, said during an interview for the GigaOm videocast that although Google often experiences slowdowns in use during summer months, this year actually saw a rise in use for Google Mobile applications during those months. "The iPhone gave us a really big lift in maps usage. Almost overnight, traffic on our Google Maps for Mobile application was up almost 50% and has continued to grow throughout the summer," Mayer said.
- The iPhone has also sparked demand for a full-fledged mobile version of the Firefox browser, and Mozilla executives say such a version is officially in the works. According to Mike Schroepfer, vice president of engineering at Mozilla, the mobile Firefox version is planned but won't appear before 2008. "Up until very recently, device limitation required writing new mobile browsers from the ground up," Schroepfer wrote in

his blog. "The user demand for a full browsing experience on mobile devices is clear. If you weren't sure about this before, you should be after the launch of the iPhone."

- Smartphones can perform more tasks now than ever before, but to move to the next generation, the devices must rely heavily on memory advances that can enable even more functionality. One such advance was revealed by NEC Labs America and Northwestern University in the form of a technique that can double usable memory without changing applications or hardware and without otherwise affecting performance or power. Called CRAMES (Compressed RAM for Embedded Systems), the technique leverages an operating

system's virtual memory infrastructure by storing swapped-out pages in compressed format. This software-based technology has already appeared in a Japan-based NEC-manufactured smartphone.

- In July, we reported that complaints were emerging over Verizon's EVDO (Evolution Data Optimized) service, because while the company claimed the service was unlimited, in reality, it wasn't. Now, Verizon is paying for the deceptive marketing practices after a nine-month investigation by New York State Attorney General Andrew Cuomo. The company has agreed to reimburse \$1 million to customers, change the way it advertises its wireless broadband service, and pay \$150,000 in penalties and fees to New York. ■

According to Google officials, Google activity—including the use of Google Maps for Mobile—was higher than normal this past summer, likely due to the emergence of the iPhone.

DULY QUOTED

"Some people have biological clocks. I might have a biological BlackBerry."

—BlackBerry user Jonathan Zaback comments on the phenomenon of phantom mobile phone vibrations, which cause users to reach for their device, even if it isn't vibrating or if it isn't there at all.

Source: Associated Press

News From The Help Desk

Our Most Common Tech Calls

COMPILED BY KYLEE DICKEY

Each month, we receive numerous technical support calls and email messages. Some computer problems are fairly common, and we find that many callers struggle to resolve the same issues. In this article, we cover three of the most common or timely tech support questions and provide our solution for each of them.

Q I am horrible about remembering passwords. Is there a way to reset my Windows XP password if I forget it?

A Yes, you actually have a couple of options. On page 12 of the March 2007 issue of *Smart Computing*, in the “News From The Help Desk” article, we covered one way that you can often regain access to your system if you forget your password. There is actually another way to get past a forgotten password, however, so we’ll take a look at that option this month.

WinXP has a feature called the Forgotten Password Wizard. This is a great tool, but it requires planning on your part, because once you forget your password, it’s too late to rely on the Forgotten Password Wizard. This is because this wizard actually helps you create an emergency plan in case you later cannot recall your password. The Forgotten Password Wizard lets a user with an administrator account create a password-reset floppy diskette. If you ever forget your password in the future, you can use this diskette that you created to reset your password.

If you think you might forget your password someday, now is the right time to create a password-reset diskette using WinXP’s Forgotten Password Wizard. To do so, make sure that you are logged in to the administrator account on your system. Then click the Start menu and Control Panel. When the Control Panel window appears, make sure that you are in the Classic View rather than Category View. If not, click the Switch To Classic View link in the left pane of the window. Then double-click User Accounts in the Control Panel window. From the listed user accounts, click to select the account for which you’d like to make a password-reset diskette. Then click Prevent A Forgotten Password from the left pane, under the Related Tasks heading.

Wait a moment while the Forgotten Password Wizard launches. Then click the Next button. When prompted, insert a blank diskette in your computer’s floppy diskette drive and click the Next button. The Forgotten Password Wizard will prompt you for your current password. If you have one, type it in the password field. If you do not have a logon password for the selected user account, leave the

password field empty. Click Next. Then wait for the Forgotten Password Wizard to create the password-reset diskette. Then click Next. When prompted, press the Eject button on your floppy diskette drive and remove the diskette you just created. Label the diskette carefully so that you will later remember what it is and why you may need it in the future. Click the Finish button when you are done creating your password-reset diskette.

Now, let’s say that sometime next year you try to log in to WinXP but cannot remember your password anymore. Click the Forgot Your Password? link on the logon screen. Choose the option to use a password-reset diskette. A wizard will launch and guide you through the process of resetting your password.

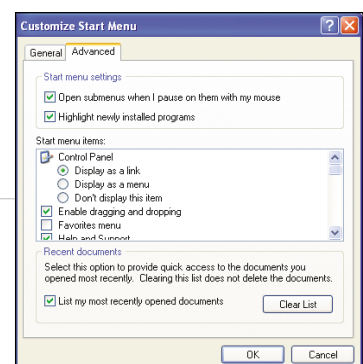
We have one final word of caution about using the Forgotten Password Wizard. Please remember that your password-reset diskette is a tool that anyone can use to change your password and log in to your WinXP user account. Please make sure that you store your password-reset diskette in a safe location where others will not have access to it or the files on your computer.

Q I have a friend who has an item on his WinXP Start menu named My Recent Documents. This looks very handy, because he can quickly launch any of the documents that he’s used recently. He cannot remember how he configured Windows to display the My Recent Documents list. How can I add My Recent Documents to my own WinXP Start menu?

A It is relatively simple to add My Recent Documents to your WinXP Start menu once you know how to do it, and you’re right, this is a very handy item to have on your Start menu, because it provides such quick access to the files you use most.

To add My Recent Documents to the Start menu, first right-click the Start menu and then click Properties. Click the Customize button

It is simple to add My Recent Documents to your Windows Start menu. You’ll find this setting in the Customize Start Menu dialog box.



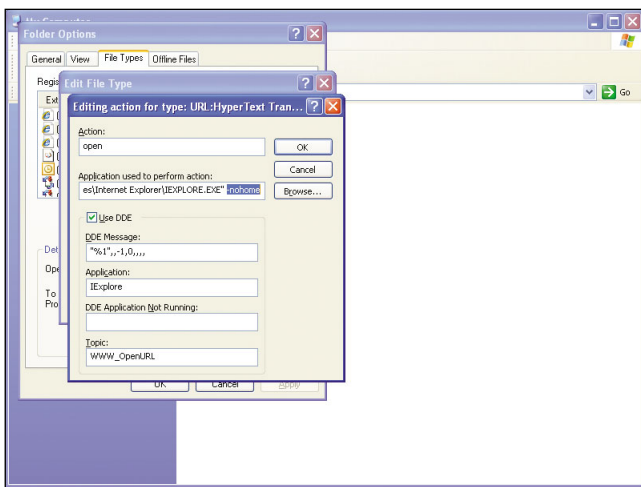
and the Advanced tab. Under the heading Recent Documents, click to place a check mark in the List My Most Recently Opened Documents checkbox. Click the OK button. You'll then need to click the OK button once more.

Click the Start menu again, and you should see the change. There should now be a My Recent Documents item on the Start menu. To see the items you've recently opened, click the Start menu and point at My Recent Documents. To open one of the items in the My Recent Documents list, just click it.

If at some point you decide that you do not want My Recent Documents on your Start menu, right-click the Start menu and click Properties. Once again, click the Customize button and the Advanced tab. Under Recent Documents, click to uncheck the List My Most Recently Opened Documents checkbox, click OK, and click OK again. The next time you click the Start menu, you should no longer see My Recent Documents.

Q After I upgraded from Internet Explorer 6 to IE7, I noticed that hyperlinks in email messages no longer work when I click them in Outlook Express. Sometimes the links just don't load in the IE7 browser window. Other times, IE7 doesn't launch at all when I click a hyperlink. Clicking links in messages always worked when I had IE6. What happened, and how can I make hyperlinks in messages work again?

A This problem usually occurs because the file association for HTML (Hypertext Markup Language) documents changed when you installed IE7. The simplest way to correct this problem is to click the Start menu and My Computer. In the resulting My Computer window, click the Tools menu and Folder Options. The Folder Options dialog box will appear. Click the File Types tab and look through the Registered



If links in email messages in Outlook Express no longer work after you upgrade to Internet Explorer 7, you will need to go into Windows Explorer's Folder Options to edit the information in the Application Used To Perform Action field for a couple of file types.

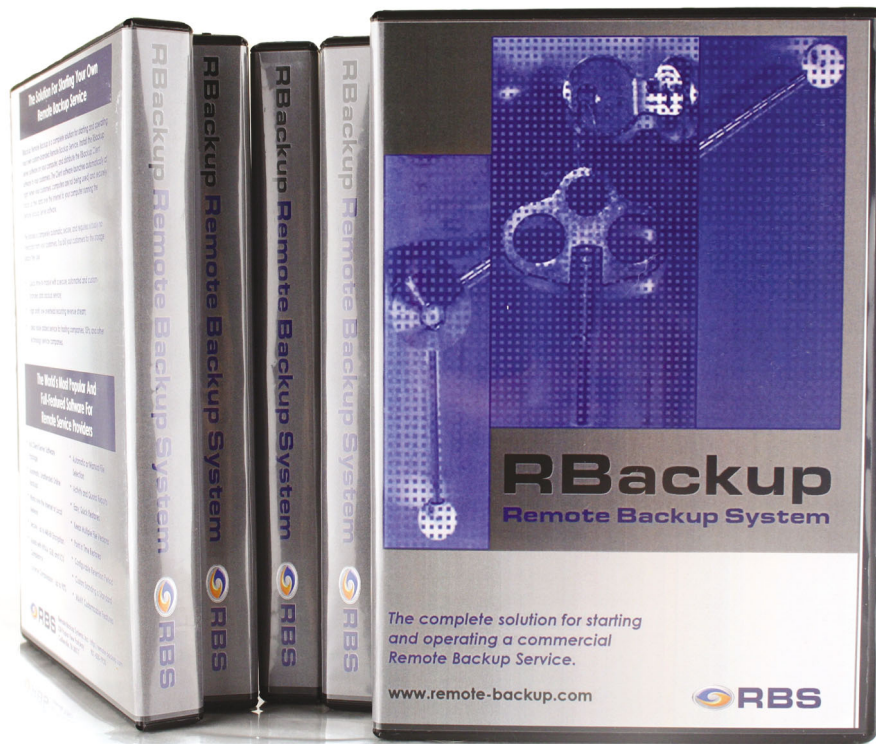
File Types list. Click to highlight (NONE) URL:HyperText Transfer Protocol from the list. Click the Advanced button. The Edit File Type dialog box will appear. Click the Edit button. In the Application Used To Perform Action field, highlight -nohome. Then type %1 so that %1 replaces -nohome. You may see a prompt to make IE7 your default Web browser. If this happens, click the No button. Click OK. Then click OK once more to close the Edit File Type dialog box.

Once you return to the Folder Options dialog box, you will need to make another change. From the Registered File Types list, click to highlight (NONE) URL:HyperText Transfer Protocol With Privacy. Click the Advanced button. In the Edit File Type dialog box, click the Edit button. In the Action Used To Perform Action field, highlight -nohome. Then type %1 to replace -nohome. Once again, if you are prompted to make IE7 your default Web browser, you must click No. After making the changes described in this paragraph, click the OK button. Click it one more time to close the Edit File Type dialog box. Click Close to close the Folder Options dialog box. Hyperlinks in Outlook Express email messages should now work. ■

Feature Package Topics

Each *Smart Computing* issue includes tips, reviews, and information about a variety of topics. However, each issue also has a featured group of articles about a selected topic. Below is a list of the Feature Packages from the previous year. As a *Smart Computing* subscriber, you have access to all of our archived articles at www.smartcomputing.com.

January 2007:	My PC Won't Start!
February 2007:	7 Critical Things You Should Know About Your Operating System
March 2007:	Resolve System Conflicts The Fast & Easy Way
April 2007:	Windows Vista: What You Can Expect From Microsoft's New Operating System
May 2007:	Set Up & Maintain A Wireless Network & Keep It Connected
June 2007:	Tweak & Troubleshoot Windows Vista
July 2007:	Clean It Out, Speed It Up!
August 2007:	Improve System Startup/Shutdown: Make Your PC Faster & More Stable
September 2007:	What To Do About PC Errors & Error Messages
October 2007:	Build It Yourself: How To Create The Perfect PC
November 2007:	How To Edit, Protect & Restore Critical PC Settings
December 2007:	Laptops Take Over
	Get It All: Power, Price & Portability



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Protect Critical Business Data With RBackup 2007

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RBackup Remote Backup Software works like regular data backup software, but with one important difference. Instead of sending backups to a tape drive or other media attached to the personal computer it is backing up, RBackup online backup software sends the backup over the Internet, regular telephone lines, or other network connections to your online backup server safely offsite. Backups can be done on-demand, at any time.

RBackup 2007 is powerful but easy to use and includes these key features:

- **Map clients to drives.** Use multi-drive arrays, SANs (Storage Area Networks) or even VPNs (Virtual Private Networks) to store data.
- **Predefine Include/Exclude files.** Build customized client installers designed for a vertical market application or a specific type of client.
- **Bigger backups.** Back up hundreds of thousands of files per Backup Set and file sizes in the terabytes.
- **Disaster Recovery System.** RBackup's Disaster Recovery System makes it easier to restore lost encryption keys or passwords.
- **Exclusive IP Detection System.** RBackup servers can now be used behind inexpensive consumer-grade routers like many that are sold at electronics discount stores. Until now, NO server software has been able to operate through these noncommercial-grade routers.

(Requires the exclusive **Server Locator** service.)

- **Scheduled start date.** Schedule backups to launch at a future date.
- **Excel Export format.** Export data to Microsoft Excel spreadsheets.

RBackup 2007 pricing and support options depend on your needs and the number of clients involved. For more information, call (800) 945-4491 or visit <http://remote-backup.com/rbackup>.



Hardware & Software Reviews

With so much information out there about computers and technology, it can be difficult to even know where to start. What should I consider when building a media center? What are the best wireless networking products? Before you make your next purchase, make sure you take a look at our Hardware Reviews and Software Reviews sections for another opinion. Reviews are separated into easy-to-find categories including Audio, Computer Parts & Components, Input devices, and much more. You'll find all sorts of great articles on topics ranging from mobile computing and media players to networking and video and photography. You can find articles not only from *Smart Computing*, but also *PC Today* and *Computer Power User*, as well. Search these articles and make your next purchase a smart one.

To find these articles:

1. Go to www.smartcomputing.com and click the Read Software Reviews or Read Hardware Reviews link.
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1. To enter a keyword search, scroll to the bottom of the page and customize your search. You can enter exact terms or broad subjects to find relevant articles within our editorial database.

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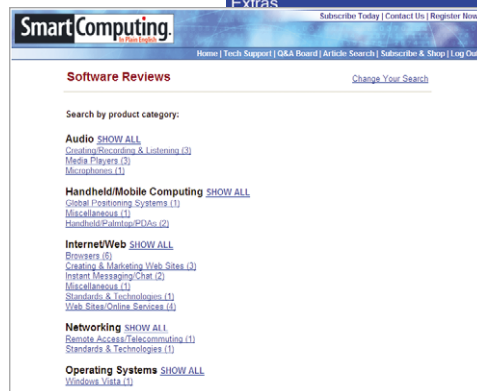
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PC Maintenance

If your New Year's resolution is to take better care of your computer *before* problems

start, go to our Tech Support Center for tips to keep your system up and running. Scroll down to find the Preventive & Regular Maintenance section of the Tech Support Center.

Happy New Year!

In honor of the new year and new beginnings, we did a search for New Years-related items on SmartComputing.com. "Resolution" turned up about 3,510 times, "midnight" came up 159 times, and "party hat" came up only two times.



From Smart Computing's Dictionary

icon



A small, graphical image that represents a function, object, or program. Operating systems, such as Windows, use icons to make file navigation and manipulation easier for users. Rather than typing the name of a program to execute the program, as in DOS, a Windows user can double-click the program's icon. Icons can also represent folders, which can contain files.

The Gift That Keeps On Giving

Even if Christmas has passed, it's not too late to give a valuable to gift to someone close to you. Go to www.smartcomputing.com and click the Give The Gift Of *Smart Computing* link to get started today.

The Beat Goes On—Silently

Ion Audio's Electronic Drum Kit Hushes The Noise

Blaine Flamig

Send your comments to
blaine@smartcomputing.com



iED01 Electronic Drum Kit

\$299.95

Ion Audio

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www.ion-audio.com

In grade school, my friend Tony was the only kid in town who owned a drum set. Tony was a good friend for reasons besides being our town's sole possessor of a drum kit, although it sure was a nice fringe benefit to our friendship. Many afternoons after school, I'd sit in Tony's attic bedroom and watch him whack out The Surfaris classic "Wipe Out!" behind his kit. And many afternoons Tony would humor me and let me have a go at the song.

Over the years, my love of the drums never waned, and as my children can testify, I'm an excellent air drummer—for whatever that's worth. Virtual skills aside, I decided long ago to invest my real practice time in the guitar, which I've never regretted. Still, visions of being the next Buddy Rich, Tito Puente, Art Blakey, or Max Roach occasionally surface, and I find myself fighting an urge to head to a pawn shop and buy a second-hand kit. Each time, though, a few points of contention rear up to prevent me from doing so, including a very real fear of peevng my neighbors off. Thanks to my introduction to Ion Audio's iED01 Electronic Drum Kit, though, I may have found a near-silent solution to fulfill my drumstick dream and keep my neighbors happy.

Putting the kibosh on the thuds and crashes a drum kit normally produces, in fact, is perhaps the iED01's strongest selling point. The kit does this through the use of a drum machine module, into which you plug headphones. Thus, other than a slight clacking of drumsticks against the kit's five hard-plastic drum heads—one snare, two

tom toms, one high hat, and one crash/ride cymbal—only you hear the racket you're making. Better, the module includes dozens of built-in rhythm patterns and drum sounds, plus various kit configurations that make the iED01 suitable for playing country, reggae, hard rock, jazz, and other styles.

Further, the module has a recording function and can output sound via a MIDI (Musical Instrument Digital Interface) so you can put your beats to use on a computer without hassle. Additionally, integrated right and left stereo jacks let you output 24-bit sound to speakers or a PA system. Bolstering all these abilities is the excellent sound quality the iED01 outputs. Ion Audio builds what it calls Dynamic Articulation technology into the kit, adding realism to your playing. For example, the harder you strike the high hat or snare drum head, the louder the tone resonates.

In addition to being an excellent (and quiet) learning tool, the iED01's ultra-friendly \$299.95 price (I've found it for around \$230 online) is definitely doable, considering performance-quality acoustic kits can run into the thousands. Additionally, the iED01's vertical design requires little storage space, and its light weight is comparable to an ironing board.

As you'd expect, there are a few trade-offs to live with for the kit's price. Perhaps the biggest sacrifices are the bass and high hat foot pedals Ion Audio bundles with the kit. Both are trigger happy and oversensitive, especially the bass pedal. Double and triple kicks weren't uncommon when I only kicked the pedal once. Some online research indicated this problem wasn't uncommon, with some iED01 owners working around the problem by using a real foot pedal together with an extra drum head for bass drum action (Ion sells additional drum heads and cymbals at its site). Additionally, some of the kit's pieces are plastic and will likely need to be replaced eventually. Further, I'd suggest replacing the headphones Ion Audio bundles with a noise-cancelling pair.

Still, the kit's design allows for a lot of adjustment in arranging the drum heads to your preferred setup. Also, what you're really buying the iED01 for is an excellent learning, practice, and recording tool that outputs great sound at an incredible price. ■

Cool Combo

Why The Smartphone Is A Smart Idea

Joshua Gulick

Send your comments to
joshua@smartcomputing.com



SGH-i607 BlackJack

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Z22

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Remember PDAs (personal digital assistants)? It wasn't that long ago that I carried two devices: a PDA and a mobile phone. Both devices had screens, displayed text, and had miserable battery life, but they were different devices, and manufacturers hadn't (as yet) figured out how to combine them. The closest the two came to convergence was when I dropped them into the same hip pocket and squeezed into an airplane seat.

Today, the fabled PDA/mobile phone combo isn't just a geeky dream. It's here, and it's killing the PDA. It's known as a smartphone, and it's a beautiful thing.

PDA Today

PDAs aren't dead yet, of course. Some of the PDA manufacturers have left the market, including Casio and Sony. Palm bought Handspring and still offers true PDAs for home users and businesses (it also offers improved versions of Handspring's Treo smartphone). Not surprisingly, Palm's new PDAs are much cooler than what I used to carry.

My old Palm m100 had a grayscale display that was hard to see under very dim or bright lighting. It was bulky, too. Still, it got the job done. It kept track of my appointments and let me read documents on the go. These days, Palm's basic PDA is the Z22, which has a smaller body and (gasp!) a color screen. It offers the same features as my old PDA and provides new ones, such as color coding for categories and support for photos.

Despite its fun new features, the Z22 is still just a PDA. You can't use it to make calls (it doesn't even have Wi-Fi connectivity, as some more expensive Palm models do), which means that I'd still need to carry a phone if I used it.

Talk Time

Today's standard mobile phones include some PDA-like features (such as contact lists and calendars), but they're not equipped to

handle those tasks as well as PDAs. For one thing, mobile phones lack the processing power that PDAs boast, limiting the types of software they can run. Some phones don't accept removable storage cards either.

Another major problem is the keypad. Sure, you can punch out an IM (instant message) via the number pad, but you have to press each key up to four times to cycle to the right character, which makes typing longer messages a daunting task. I often misspell words because I accidentally press a key one time too many, and I generally ignore the misspelled word. When your entire keypad is about twice the size of your thumb, spelling and grammar go out the window.

Smartphones

Over time, manufacturers melded phones and PDAs into the pocketable (and reasonably affordable) technology wonders known as smartphones. Samsung's SGH-i607 BlackJack, which is only 4.45 x 2.32 x 0.46 inches (HxWxD) and weighs a mere 3.5 ounces, is a great example of a smartphone.

The BlackJack sports everything you'd expect to find in a PDA. It runs the Windows Mobile 5.0 operating system, which closely resembles Windows operating systems for desktops (it even has the familiar Start button). The device lets you read and edit documents and spreadsheets, and it has a full-sized keyboard (well, full-sized for a PDA). The BlackJack doesn't have a stylus, as the Z22 does, but it has a navigation dial and directional buttons that let you move quickly through menus and options.

On the phone side of things, the BlackJack features all of the calling capabilities a mobile phone has, as well as a data connection that lets you download news articles, music, and videos. It also lets you send IMs and emails. The BlackJack also features a 1.3MP (megapixel) camera and Bluetooth connectivity so you can connect your wireless headset.

I've tested plenty of great PDAs and mobile phones, but the BlackJack is one of the few with which I've been reluctant to part. The smartphone is just barely larger than my personal mobile phone but offers far more features. If you're frustrated with the limitations of your PDA or mobile phone, the time is right for a smartphone upgrade. ■

Whistle While You Work . . .

Or At Least Listen To Music

Kathryn Dolan

Send your comments to
katie@smartcomputing.com



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SanDisk

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As the raw winter winds howl through the barren black walnut tree in my backyard, I get nostalgic for the stately trees that formerly graced my yard and the yards of my neighbors. I used to love the sound of the wind rustling through the leaves at night and the welcome relief their shade provided from 100+ degree summer days.

My fondness didn't waver each fall, as I spent countless hours mulching and composting endless piles of leaves. My heart broke, however, as straight-line winds, microbursts, and other freakish storms felled tree after tree over the next several springs and summers.

Now, only the hated black walnut tree remains—the one tree I'd have willingly sacrificed. It's toxic to many vegetables, including the tomatoes I tried planting year after year.

So now, each fall, I resentfully watch that lone surviving tree divest itself of its leaves, knowing I can neither mulch nor compost them because they'll kill the lilacs and hydrangeas in my front yard.

Tiny Player; Big Sound

This past fall, however, I handled the leaves with a rake and the SanDisk Sansa Clip (2GB, \$59.99; www.sandisk.com). The tiny Clip weighs less than an ounce, so I scarcely noticed it in my jacket pocket as I raked. Its 2GB of storage held more than 400 songs, and I didn't have to recharge the Clip during the three evenings I spent raking and bagging leaves. The specifications say you'll get roughly 32 hours per

charge, and the battery charges while the Clip is connected to a computer via its included USB 2.0 cable.

I burned several CDs to my Windows XP SP2 (Service Pack 2) computer using Windows Media Player. From the Sync menu, I dragged and dropped the songs to the Clip. The Clip plays WMA (Windows Media Audio) and MP3 music files and also supports Audible files—an audio book format. I also bought songs from Amazon.com's new MP3 store (www.amazon.com; from the home page, select MP3 Downloads from the drop-down Search menu). Although the service was still in beta at press time, I didn't have any trouble using it.

As I raked, I was sometimes in the mood for a particular artist, so I listened to several CDs' worth of songs. Other times, I wanted to mix things up a bit and opted for Shuffle, which draws from all of the albums and artists for a random mix of songs. And when the weather looked threatening, I tuned in to a local FM radio station to see how much more time I could hope to spend in the yard.

The best part of the tiny player is the big sound it kicks out. I'm still amazed that a device that's barely bigger than a book of matches is capable of producing such rich, full sound.

Defective Ears

There was one thing I absolutely did not like about the Clip, and that was its earbuds. They felt huge and uncomfortable and made my ears ache. Plus, even though I had little to smile about while raking leaves, every time I smiled, one of the buds popped out of my ear.

I may have defective ears because I've never found a comfortable pair of earbuds, so I replace them with over-the-ear headphones. If you're like me, you can replace the buds with any headphones that are compatible with a 1/4-inch stereo jack.

All things considered, though, I really liked the Clip. It was easy to use and inexpensive, and listening to music was the perfect accompaniment to raking leaves, cleaning gutters, mulching flower beds, and winterizing my yard. ■

Project Vinyl Rescue

Turn Your LPs To CDs With USB

Marty Sems

Send your comments to
marty@smartcomputing.com



T.90 USB Turntable

\$399

Stanton

www.stantondj.com

Years ago, I gave my dad an unusual Christmas gift. I used my computer and my sister's old stereo to turn 10 of his favorite vinyl LPs into CDs.

Dad loved his unique present. And I vowed I'd never do it again.

From start to finish, the whole operation took me about five times as long as I'd planned. Getting the sound input level right was a nightmare with the equipment I had. The turntable needed a new needle, too. Finally, I didn't have software that makes a job like this easy.

Times have changed. New software and hardware streamline LP-to-CD conversions. That's a very good thing, because many records simply aren't available on CD, especially those ancient 78s. Unlike digital music, every time you play something on vinyl, the needle wears the record a little more. And there's always the chance of scratching an LP or even breaking it.

When you rip old music, or convert it into digital files, you can lock up those old albums in a safe place for good. You can make backups of the new sound files. You can reduce the clicks, crackles, and hums using software. You can burn the songs to CD or just listen to them on your computer. And you can play a music file as many times as you want without hurting its sound quality.

Stanton's T.90 Turntable attaches to your PC or Mac via USB (it also has analog and digital RCA outputs), which eliminates the hassle of configuring your sound card's inputs. It also comes with software to help you rip your music, reduce its clicks and pops, save it in lossless WAV or compressed MP3 formats, and burn it to CD.

The T.90 USB is no toy. It's a professional, precision-made turntable, and some assembly is required. I had to assemble the tone arm, straighten its 500.V3 needle cartridge, and set the stylus pressure (3 grams, fyi). Stanton's users manual leaves out some crucial details from this operation, but I eventually pieced together enough information from the Web site to get started.

When I turned on the T.90 for the first time, I directed WinXP's Found New Hardware Wizard to search for a driver online. The driver hadn't been certified yet, but I told the wizard to install it anyway, and it worked fine.

The included Cakewalk Pyro 5 software (Windows 2000/XP only; www.cakewalk.com) is straightforward, but there's still a learning curve. (Stanton recommends that Mac users download the free Audacity sound editor [audacity.sourceforge.net/download].) I liked that Pyro could automatically adjust each song's volume to a standard level. However, its click-and-pop reduction never seemed to work for me, so I turned to Nero 7 Ultra Edition (get Nero 8 for \$99.99 at www.nero.com). Nero recognized the turntable, ripped some LP tracks, and noticeably reduced the hisses and crackles. Either utility will let you adjust the amount of noise reduction, but don't go overboard or you'll make your music sound flat.

Pyro lets you record an entire side of a record and then split it into separate song files. Always save the files as WAVs or in another lossless format until you're ready to burn them to CD or convert them to MP3s.

Neither Pyro nor Nero let me hear my music as it was recording, so I connected the turntable's analog output to a boombox so I could hear what was going on. My finished Pyro CDs sounded much like the original vinyl tracks. My Nero discs sounded a little less bright and brassy, but that was the trade-off for enabling noise reduction.

Stanton's T.90 USB isn't for the novice, but it certainly will help your old records sound their best as they go digital. (For other LP-to-CD options, see "Music + Computing" on page 29 of the October 2007 issue of *Smart Computing*.) ■

Media Players

With so much of our lives tied up in our computers, it should come as no surprise that more and more of us are using our PCs in place of our old stereos and entertainment systems. Nowadays, nearly everyone needs a reliable digital media player running on his system to play music and video files.

The basic features for a good multipurpose media player include the ability to locate and play digital files on your computer, play CDs and DVDs, rip music from audio CDs, create and burn playlists to removable media, as well as stream and purchase digital content from the Internet. Your media player also needs to sync media files to your favorite portable devices.

You can plunk down money for a media player, but it's difficult to justify when the most popular free applications work just as hard for you. The big three—iTunes, Winamp, and Windows Media Player—offer comparable baseline features, but each fill a particular niche on their own.

iTunes 7.43



Most people these days probably think of iTunes as an online music store, but iTunes the software is more than a way to shop for songs. iTunes handles downloaded video, streaming video, Internet radio stations, and just about everything else you might want to watch or listen to.

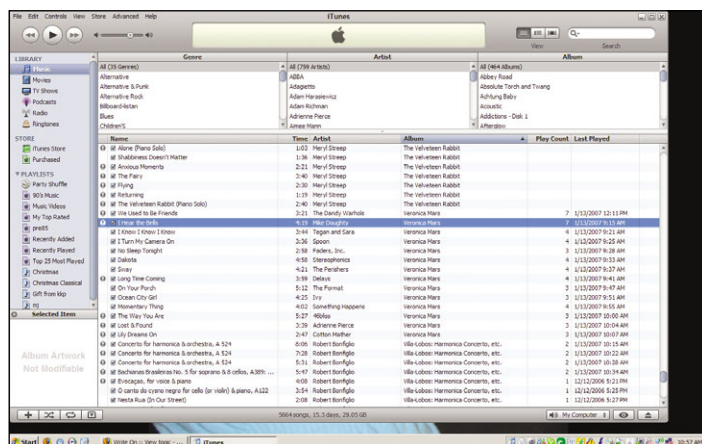
As might be expected, iTunes also provides the best software support for Apple's iPod line of music players. Plug an iPod into your computer, and iTunes quickly recognizes the device and provides various options for managing the player and syncing new songs. iTunes will work with certain other players, and iPods work with certain other programs, but it's probably no surprise that these two work especially well together.

For example, iTunes features support for adding podcasts, the growing legion of regularly updated short audio or video segments on specific topics available through the Internet, to an iPod. You can subscribe to podcasts you like, and then click the iTunes Podcasts section to see all recently downloaded content. iTunes will also set up podcasts for automatic syncing on an iPod. Quite a few iTunes users probably switched from Windows Media Player or some other player upon buying an iPod. Once you relearn a few commands and menus, the iTunes interface is fairly intuitive. The player offers three main views: a list of all songs that can be sorted by title, album, and artist (among other ways); a list of albums with album cover pictures; and Cover Flow view, which shows all album covers in a kind of stack you can quickly flip through. The last view is nice if you're controlling your computer from across a room, such as on a newer Mac with its included remote. The search bar at the top of the window is the best way to zero in on a particular artist or song. Otherwise, it's a pretty long slog through a library of any size.

Playlists are easy to make and save in iTunes. Add songs by right-clicking them in the main window, or construct a "smart playlist" that searches out songs that match certain criteria. The player includes several preconstructed smart playlists, including songs played most often and songs most recently added to your library.

Computers sharing the same network will share iTunes libraries with just a couple of clicks. iTunes can also integrate directly with Apple's \$99 Airport Express base station with AirTunes to provide remote audio around your home. Plug the Airport Express into an outlet, hook it up to a stereo or a set of powered computer speakers, make a few configuration tweaks to your wireless network, and

iTunes 7.43	
✓	Systems Supported
	Windows Vista
	Windows XP
	Windows Me
	Windows 98
	Mac
	Linux



Winamp 5.5	
✓	Systems Supported
	Windows Vista
	Windows XP
	Windows Me
	Windows 98
	Mac
	Linux

BUYING TIPS

If you don't watch much video on your PC, consider looking beyond the media players profiled here. A lot of audiophiles are tuning in to free audio-only players, such as foobar2000 (www.foobar2000.org) and MediaMonkey (www.mediamonkey.com). So if you simply need something to play your MP3s, you might want to check out one of the indies.

you play your iTunes library through the remote speakers as if they were your computer's own speakers. Set multiple Airport Express stations up around the house, and then pick and choose which speakers receive your computer's audio output.

With all of its built-in capabilities, as well as the immediate access to iTunes online, this is a tough player to beat.

Winamp 5.5

Winamp is a venerated media player that has long been available for free to anyone who wanted a highly customizable program with more features than you'd probably need. Now offered in version 5.5, Winamp keeps chugging along, adding modern capabilities but retaining a small file size and the low price of \$0 for the standard edition.

Winamp plays both audio and video and supports an impressive list of file types. Ripping CDs or otherwise converting files to the well-known MP3 format, however, is available only in the \$19.95 Pro version of the program. Purchase of Winamp Pro also lifts a limit on ripping and burning speeds imposed on the free version.

Winamp syncs with a variety of portable music players, including iPods. The latest version even supports album art for the customary iPod graphical experience. If you don't have the music you want loaded on your portable player, Winamp might be able

to help out from afar. Although the feature is still in beta as of this writing, Winamp includes the potentially nice ability to stream your entire library of music and video over the Internet to another location. A wide range of devices can play the stream, including some Internet-connected mobile phones and video game consoles. Winamp takes care of the technical details behind the scenes. You just create a user ID and password, leave your computer on so that it is



available to stream, then visit a special Web page on the remote device. After you log on to the service, you should be able to browse and play the music files in your library. You can also share selected songs with friends.

The latest version of Winamp includes some interface improvements, although we still find the program's main window a little busy. It's probably safe to say that Winamp will be a bit difficult for some users to pick up and immediately

Software Information

	Price	Company	Contact Information	URL	Notable Features
iTunes 7.43	Free	Apple	(800) 692-7753	www.apple.com/itunes	<ul style="list-style-type: none"> Integrated access to the iTunes Music Store Designed to work with iPods Easy-to-use interface
Winamp 5.5	Lite/Full Free; Pro \$19.95	Nullsoft	Online only	www.winamp.com	<ul style="list-style-type: none"> Loyal user base designs plug-ins and offers support New Winamp Remote streams music to range of Internet-connected devices Highly customizable and configurable
Windows Media Player 11	Free	Microsoft	(800) 642-7676	www.microsoft.com	<ul style="list-style-type: none"> Sleek interface Intelligent search works as you type Drag-and-drop playlists

Windows Media Player 11	
✓	Systems Supported
	Windows Vista
	Windows XP
	Windows Me
	Windows 98
	Mac
	Linux

understand, but if you play around with the program for a while, we're guessing navigation will no longer be a problem.

Overall, Winamp is a capable player with a loyal following. The lack of MP3 encoding in the free version could be a significant drawback to some users, however, depending on their situation.

Windows Media Player 11

Microsoft's latest update to Windows Media Player delivers a fresh face and several winning features. The first thing you'll notice is the color—glossy black instead of blue—and the overall sleekness of the new design.

As with WMP 10, the default setting hides the standard menus and focuses instead on Now Playing, Library, Rip, Burn, and Sync buttons, each with its own hidden drop-down list of options. WMP 11 also has nifty Back and Forward buttons that let you move

means to create lists. Rearrange files as needed without frustration before a quick and easy burn.

The left-hand navigation pane houses access to any music services and devices you have configured, along with any accompanying content. WMP 11 works well with several different online stores but touts its integrated MTV-developed URGE. It's just too bad Microsoft didn't add built-in podcast capability also.

Syncing is vastly improved and includes Reverse Sync ability, so you can load things to WMP 11 from your portable device. The worst, of course, is continued incompatibility with iPods. As with podcasts, you'll need some third-party app to make this work. That said, WMP 11 does a great job of sharing files with other PCs and devices on your home network, including Xbox.

While WMP does a fair job of automatically grabbing album images, you'll still see many generic icons. With a little practice, it's relatively easy to grab the right image. In previous versions, we had a heck of a time convincing WMP we were connected to the Internet when we wanted to do this—it would insist we weren't, despite all evidence to the contrary. This hair-pulling quirk hasn't resurfaced yet, so perhaps Microsoft fixed this. Unfortunately there seems to be no fixes for the tag editing though.

Despite the new interface's emphasis on music files, you can still use WMP to view video or photo libraries; simply click the Library button to view the other options.

For current WMP users, this upgrade will improve your media experience dramatically. For new users employing anything but an iPod, it's definitely worth checking out.

If The Glove Fits

The bottom line is that no one-size-fits-all media player exists. The top three all have advantages, depending on your needs. They each have stumbling blocks too—they all get hung up from time to time. If you use an iPod, it's hard to recommend anything but iTunes, unless you're willing to try third-party plug-ins. For other device users, any one of these leaders is a smart choice. ■

BY ANNE STEYER PHELPS



BUYING TIPS

Whether you have an iPod, Creative Zen, or some other portable media player, you really must make sure the computer application you choose can sync with it easily. This is especially true given the iPod's proprietary file format.

Check with your portable device's manufacturer for a list of compatible applications.

around easily. The playback controls sit in the middle bottom of the window (making this a simple interface to learn) and now include repeat and shuffle.

Instead of the old left-hand tree listing of all types of digital media files, you're presented with music-only categories represented by colorful album art icons. It's pretty, but large libraries might make loading seem interminable, so you can fall back on a text list if necessary. Another cool improvement is the stacking of files, so it's easy to see if there are multiple files within a category, such as Artist or Year.

The improved Search function is speedy and smart; it locates file matches as you type. WMP 11 also lets you save search results as a Playlist, employing drag-and-drop as a

\$79.95

Kaspersky Lab

(800) 406-4966

usa.kaspersky.com

All-In-One Protection

Internet Security 7.0

Kaspersky Internet Security is new to the all-in-one security category. It's not as feature-laden in some areas as it might be, and setup can be a bit complicated for novices. Nevertheless, it's a powerful contender that offers extraordinary depth in critical security functions for the price. With this product, you gain protection against viruses and other malware, spyware and spam, a firewall, and a proactive system defense tool, plus privacy, phishing, and parental controls.

Bad Guys, Be Gone

We look for two main features in any Internet security suite. First, it must handle critical security tasks nimbly. Second, it should have minimal effect on system resources or our PC's ability to perform the routine tasks. In general, Kaspersky's Internet Security 7.0 does well in both regards.

According to data from Kaspersky Lab, independent labs rank the product with a 97.89% detection rate overall for malware. In August 2007, independent lab AV-Comparatives.org gave Kaspersky's Anti-Virus 7.0.0.125 (part of Internet Security) an Advanced+ rating for on-demand scanning.

It caught 12 of 12 **polymorphic viruses** (viruses able to mutate and change code each time they infect a file) and scored 99.3% success on the most dangerous threats—Windows viruses, macros, worms, scripts, and other operating system threats. That put it in third place, only 0.3% behind the leader, AVK.

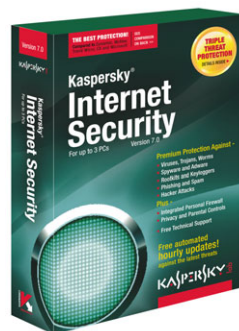
However, in a proactive/retrospective test from May 2007, Kaspersky rated merely Standard overall. One facet of the rating, the average detection rate, was 9%. Don't necessarily avoid Internet Security because of this showing. The vast majority of threats are detected quickly, and Kaspersky is one of the few security firms to offer hourly updates.

Protect & Serve

Internet Security's other protections are a mixed bag, but we were pleased to find that

the most important security functions worked the best. The firewall and system monitoring do an excellent yet unobtrusive job of blocking incoming attacks.

The other modules are solid, too, although some are set at less-than-robust protection levels. This ensures the lowest degree of false positives. We recommend users experiment with them to find the highest degree of protection that still enables smooth operation.



At The Start

Internet Security takes time to install and set up (about 45 minutes), partly because it runs a wizard that asks a lot of questions. This is a valuable process that customizes the product for your needs and will result in smoother—and less disruptive—operation.

It asks about notification, update, and scanning preferences, and then it scans your PC for applications and sets up rules for them. It also allows you to add programs it misses, and in our tests, it recognized their functions and created rules for us.

After setup and restart, the program will scan for updates and ask to restart again. Ours didn't actually restart—we had to do it manually. Once you do, it will imperceptibly perform a virus scan in the background. However, to get the spam filter to function optimally, you'll need to do some training and possibly tweak its parameters. Furthermore, to use your Address Book for the White List, you'll have to export it from your email client and then import it into Internet Security.

All considered, Internet Security is a great program for intermediate users that like to tweak and hate being stonewalled by automated programs. Novice users may find it requires a bit too much effort—and consequently not take the steps to obtain full value and protection. Use the fully functional, 30-day trial to see if you're up to the task. ■

BY JENNIFER FARWELL

✓ Systems Supported

	Windows Vista
	Windows XP/2000
	Windows Me
	Windows 98
	Mac
	Linux

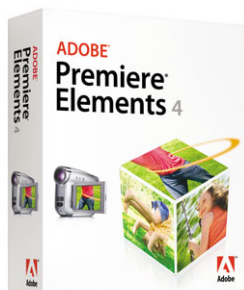
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✓ Systems Supported

Windows Vista

Windows XP

Windows Me

Windows 98

Mac

Linux

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www.east-tec.com

✓ Systems Supported

Windows Vista

Windows XP/2000

Windows Me

Windows 98

Mac

Linux

Simpler Video Editing

Premiere Elements 4

We love hearing the word “Elements” in an Adobe title. It generally indicates a user-friendly product with a consumer-level price yet near-professional-grade functionality. Such is the case with Premiere Elements 4 in some areas, but a few glitches stop us from issuing our most enthusiastic endorsement.

We think the product offers an excellent value and is an improvement over Premiere Elements 3. It has a streamlined interface that puts major functions into a single, neatly organized display and aggregates the collection of special menus and palettes onto a unified, tabbed palette, and places the editing timeline conveniently at the bottom of the interface.

Premiere Elements 4 has also added new mixing and special effects features, including new transitions, animated titles, and themes. It offers a full-featured audio mixer and a nifty music video option that reads the beats of songs and integrates videos with them.

On the downside, the program is big. Normally, we don’t complain about video programs being large, because manipulating

these files takes a lot of processing oomph. But in the case of a product that may appeal to users with older computers, we’d like to see a tighter ship. Premiere Elements 4 requires a whopping 4.5GB of drive space. Also, while the Pentium 4 1.7GHz chip requirement for standard video formats is reasonable, the processor requirement jumps to 3GHz if you want to work with high definition or Blu-ray. Finally, Premiere Elements 4 seems to be cantankerous running on anything other than PCs with “Intel Inside.”

Adobe says users can make fun movies in 15 minutes, but novice users will likely be overwhelmed by the breadth of functionality for longer than that. Furthermore, its default (but user-changeable) settings often result in lower-quality output than we like. It’s a better choice for intermediate users with video-editing experience and big-dog systems who are looking for an inexpensive alternative to professional video editors. **II**

BY JENNIFER FARWELL

Protect Your Privacy

East-Tec Eraser 2007

It’s not often that we see perfect software, but East-Tec Eraser is close. If you are concerned about erasing your tracks online or on the PC, this product is for you.

East-Tec Eraser 2007 can destroy evidence of online activities, including visited Web sites and downloaded or opened images, video, and sounds; email messages and chat histories; and flotsam left behind when you use the AutoComplete function.

It can also permanently remove every shred of digital data that composes the documents, images, sounds, and other files stored on your PC. Using its Media Wiper feature, you can also permanently delete data from an entire removable or stationary drive (a must if you ever sell your PC to someone else).

East-Tec Eraser installs quickly and easily and consumes few system resources. It has a user-friendly interface and a helpful setup wizard. It’s a great program for everyone from novice to expert who doesn’t want to spend a lot of time fiddling with a task like this.



It offers an automated scheduling feature or drag-and-drop shredding and a user-configurable Panic button that closes running programs and starts erasing, in the background, the tracks you specified in advance.

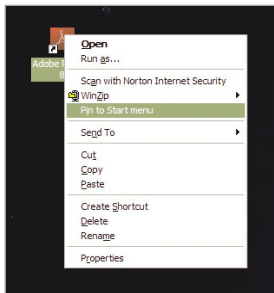
East-Tec Eraser is not a program that hides data you can recover with a special password or key—it completely removes data you designate. For this reason, be mindful during setup, especially if you extend the process to anything other than Internet tracks. **II**

BY JENNIFER FARWELL

Customize WinXP's Start Menu & Taskbar

It's not uncommon to see someone's Windows XP Desktop filled with countless icons representing shortcuts to the programs and documents he or she uses on a regular basis. Given the Desktop's prominence, it's not surprising that—perhaps out of inertia—people tend to use it as a de facto workspace.

But the downside to working off the Desktop is that it usually doesn't take too long before it gets so cluttered with stuff that quickly finding what you're looking for becomes increasingly difficult. All that clutter will also use up resources that you could be using elsewhere. All those icons will slow your system at startup. If this sounds familiar, read on as we explore some ways to customize the Start menu and Taskbar to make program and document access easy.



You can add any program to your Start menu by clicking a file or shortcut and selecting Pin To Start Menu.

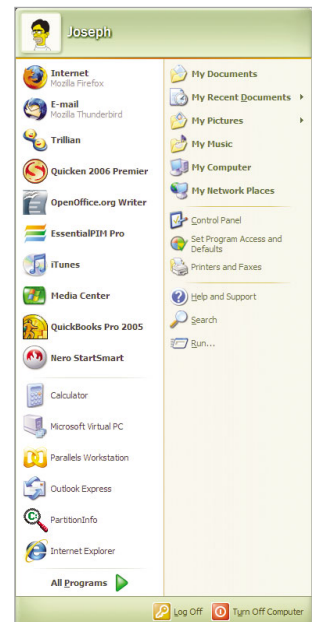
The program list on the Start menu's left side is divided into two groups by a thin line. Above the line sit shortcuts to your default Web browser and email programs, along with a list of applications you can customize. Adding your own favorite programs to this list is easy, and it will make them accessible in just two mouse clicks. To add your own program to the Start menu, just right-click a program file or shortcut anywhere within Windows and select the Pin To Start Menu option. (The Pin To Start Menu option isn't available for data files such as documents or videos.) Each new shortcut you add to the Start menu is put at the bottom of the list, but you can rearrange the order of your shortcuts by clicking and dragging them with the mouse. To remove a shortcut from the list, just right-click it and choose Unpin From Start Menu.

Below the Start menu's left column's dividing line is a list of shortcuts to a half-dozen frequently used programs,

which are displayed in order of usage beginning with the most frequently used on top. There's no way to change the order of these shortcuts because this list is automatically generated by Windows (which updates it periodically as your usage changes), but you can remove an entry from the list by right-clicking it and choosing Remove From This List. When you do this, WinXP will usually fill the void with another recently used program.

To further customize how your Start menu displays programs, right-click the Start button, choose Properties, and then click the Customize button. Under the General tab, you can opt to have the Start menu use small icons or large icons. Choosing to display small icons is a good way to reduce the size of the Start menu when you've got it filled with lots of shortcuts. Just below that, you can increase or decrease the number of frequently used programs WinXP will remember for you, as well as clear the list entirely if you want to start from scratch. Finally, you can decide whether you want your Internet (Web browser) and email applications to be listed on the Start menu, and if you have more than one version of either installed, you can specify which ones the Start menu will display.

Under the Start Menu Items heading, you'll find lots of other ways to customize how the Start menu provides access to special folders such as My Computer, My Documents, etc. The default setting is to display these items as a link, which means that clicking one will open the folder in its own window. By changing an entry to display as a menu, you can view and access contents of a folder from right within the Start menu. For detailed



With the Pin To Start Menu feature, you can fill the top half of the Start menu's left column with shortcuts to your favorite applications, while Windows will automatically fill the bottom half with shortcuts to your frequently used programs.

directions about how to add a list of recently accessed documents to your Start menu, go to “News From The Help Desk” on page 11.

Add Toolbars To The Taskbar

Most of us use the Windows Taskbar mainly to switch among programs that are already open. But by adding a few toolbars to it, the Taskbar can provide another easy way to launch programs or documents.

To add a toolbar to the Taskbar, right-click the Taskbar and highlight Toolbars. This will display a menu of standard toolbars, some of which come with Windows, while others may be connected to programs you installed.

One of the more useful toolbars is Quick Launch—select it, and just to the right of the Start button, a list of program shortcuts will appear. Click the Quick Launch toolbar’s double right arrow, and a menu of shortcuts that don’t currently fit on the toolbar will sprout off of the Taskbar. To add your own programs to Quick Launch, right-click an empty section of the Quick Launch toolbar and then choose Open Folder. Any shortcuts you put into this folder will immediately be available through Quick Launch. Another handy feature of the Quick Launch toolbar is the Show Desktop icon (the one that looks like a desk blotter and pencil), which will immediately minimize all your open application windows and return you to the Desktop.

If you spend a lot of time working within a particular folder, you can get easy access to its contents by making it into a toolbar. Right-click the Taskbar again and from the Toolbars menu, select New Toolbar and find the folder you want. (It can contain program shortcuts, documents, pictures, videos, etc.) When you select the folder and click OK, it will appear as a toolbar on the right side of the Taskbar, next to the Windows tray.

Whenever you add a toolbar to the Taskbar, you’ll notice it has an adjacent column of dots (on the left or right, depending on the toolbar’s location). You can click and drag these dots to resize a toolbar. To hide a toolbar, right-click an empty part of the Taskbar, select Toolbars, and then click the toolbar you want to remove—you can restore default toolbars at any time by repeating the process.

Enlarge & Relocate The Taskbar

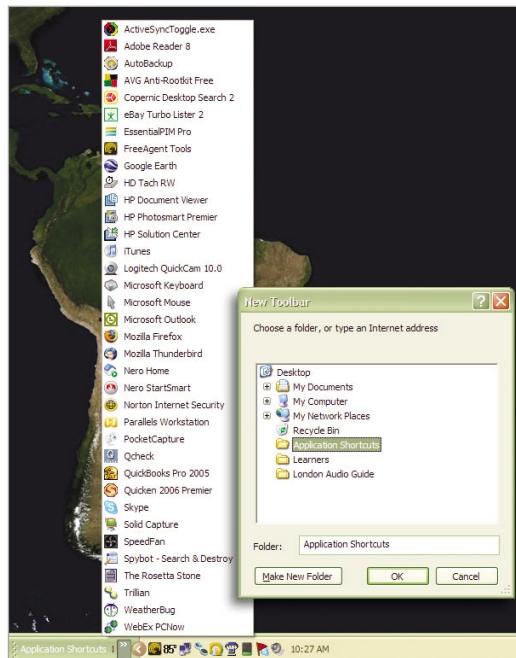
An unpleasant side effect of using toolbars can be a very cramped Taskbar. The Taskbar doesn’t offer a lot of space in its standard form, but expanding its height can really give it some elbow room. First, right-click an empty space on the Taskbar and make sure that the Lock The Taskbar option isn’t checked. Then, position the mouse cursor along the Taskbar’s top edge until the cursor becomes a vertical arrow and hold down the mouse button and drag the Taskbar upward until it’s the height you want.

Expanding the Taskbar by just a row or two should allow it to easily accommodate several toolbars along with all the open application buttons you would normally have (and with the extra space, those buttons won’t have to be shrunk down to fit).

In addition to endowing the Taskbar with more space, you may find it works better somewhere other than its default position at the bottom of the screen. When you click an empty Taskbar area, you can drag the Taskbar and anchor it to any other edge of the screen. (If you have multiple monitors, you might find the Taskbar more useful when aligned along the left or right side of one monitor rather than the top or bottom.) You can still resize the Taskbar at its new location, and once it’s positioned the way you want it, enabling the Lock The Taskbar option mentioned earlier will prevent you from accidentally changing it or moving it out of position.

Finally, you can keep your newly expanded toolbar from hogging too much Desktop space by configuring it to hide itself when not in use. To activate this option, right-click an empty space on the Taskbar, select Properties, and then select the Auto-hide The Taskbar option. When Auto-hide is turned on, the Taskbar will remain conveniently out of sight until you summon it by moving the mouse cursor to the appropriate edge of the screen.

Relying less on the Desktop and more on the Start menu and Taskbar for program and document access is a good way to avoid cluttered Desktop syndrome and hopefully keep your WinXP activities better organized. ■



For easy access to any folder from the Taskbar, you can make it into a toolbar. Toolbars you create will appear along the right side of the Taskbar.

BY JOSEPH MORAN



The Right Diagnosis

WinXP's Net Diagnostics Provides Detailed Troubleshooting Information

When you have trouble with your Internet connection, it can be difficult to know what exactly is causing the problem. There are many points where an error could occur: your ISP (Internet service provider), your modem or router, your Windows configuration, or even the configuration or installation of your email client or Web browser. Luckily for those experiencing network connection problems, Windows XP provides a built-in tool to help with troubleshooting and pinpoint the source of the trouble.

WinXP's Net Diagnostics is a utility that performs a variety of tests and collects information about your PC and its network connection. This is information that you might use yourself to troubleshoot problems related to a network or the Internet, but you can also use the information provided by Net Diagnostics to help a technical support representative figure out how to assist in repairing your network connection. Even if you don't understand exactly what all of the Net Diagnostics tools do, a tech support rep should know what the data means and how to apply it toward troubleshooting.

Net Diagnostics performs a variety of operations, such as pinging DNS (domain name servers), gateways, SMTP (Simple Mail Transfer Protocol) servers, POP3 (Post Office Protocol 3) mail servers, and proxies. Net Diagnostics can also perform checks of your hardware, testing your modem, network adapter, and other network hardware.

Start Troubleshooting Now

To access WinXP's Net Diagnostics, click the Start menu, All Programs, Accessories, System Tools, and System Information. In the resulting System Information window, click the Tools menu and Net Diagnostics. This will launch the Help And Support Center in a new window.

You have two options: Scan Your System or Set Scanning Options. The default set of scanning options should be sufficient for most users, but if you want to

tailor the scan to your system's specific settings, click the Set Scanning Options link.

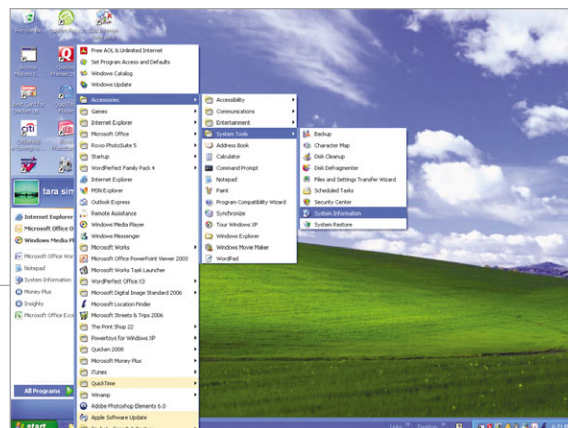
You'll see the Options list appear in the Help And Support Center window. There are two subcategories in the list: Actions and Categories. In the Actions list, you'll place a check mark in the checkbox of each action that you want Net Diagnostics to take while scanning your system. Your choices are Ping, Connect, Show, Verbose, and Save To Desktop. Usually you will use Net Diagnostics together with the assistance of a tech support representative, so you'll probably have someone tell you which items to select. However, if you are using WinXP Net Diagnostics to do your own independent troubleshooting, it will help to have a firm grasp of which scanning options you have and what each does. Below, we cover each of the actions in Scanning Options in more detail so that you can decide whether you want Net Diagnostics to perform each of these procedures.

Ping. The first action that Net Diagnostics can perform is to ping another system over the network. When Windows sends a ping command, it is checking to see if it can communicate with another networked system. It does this by making a basic communication request (an echo request) and then waiting for the other system to send a reply (known as an echo response). The results of the ping tell you how long it took from the time the request was sent to the time the response was received. Generally, you will also receive information about any data that was lost in the transition (known as packet loss). The Ping option is useful when you want to confirm that there is a network connection open between your computer and an outside system.

Connect. When Net Diagnostics performs the Connect action on your system, it is making a very basic check to see if the remote system is running a network service. This won't tell you whether that network is working properly, only that it is running.

Show. When you let Net Diagnostics perform its Show action, it simply gathers data for the requested category and lists the information. As opposed to other actions,

Net Diagnostics is somewhat hidden in WinXP. You'll have to do a little digging to get to the tool.



such as Ping and Connect, Show does not run any tests. Instead, it generates a simple report with specifications for a requested item. You will probably not use Show for any of your own troubleshooting. However, if you call or email technical support, a representative may ask you to use Net Diagnostics' Show action so he can learn more about your system or the type of network connection you are trying to establish.

Verbose. One of the other options in Net Diagnostics is Verbose. This action is very similar to Show, except that the information it gathers and presents is more advanced. The data gathered with the Verbose command may be very useful to a technical support representative, but it will not tell much to the average home user.

Save To Desktop. This action makes your Desktop the default place to save a copy of the data gathered during a scan. After you finish your scan, click the Save To File button, and a file will appear on your Desktop. This lets you browse the results later, print the results, or send the file to a tech support rep as an email attachment.

Pick Your Categories

In addition to selecting which actions Net Diagnostics should run, you should also choose the Categories for which Net Diagnostics should run its tests and actions. There are many options here. You can use the default options, or you can select just those that you need to run. For example, if you only have problems sending or receiving email but have no trouble using your Web browser to view Web sites, you should run tests related to email by selecting Categories such as Mail Service. In that example, you may not need to run tests in some other Categories, such as News Service or Network Adapters.

The first three options are Mail Service, News Service, and Internet Proxy Server. If you place a check in the Mail Service checkbox under Categories, Net Diagnostics will include the names of the incoming and SMTP (outgoing) mail server in its report. When you select News Service, your Net Diagnostics report will include the news server name and port number that are configured in Outlook Express. In addition, if you select the Ping and Connect options, Net Diagnostics will also ping the news server and attempt a connection to see if the news server is running. The Internet Proxy Server option includes the server name, port

number, and whether the proxy is enabled in IE. The proxy server is the server you connect to that forwards your requests, such as requests for Web pages or files, to the proper external server. If you selected the Ping and Connect actions, Net Diagnostics will also ping and attempt to connect to the proxy server.

Next, there are several options that display basic information about your system. To find the specs for your computer, place a check mark in the checkboxes for Computer

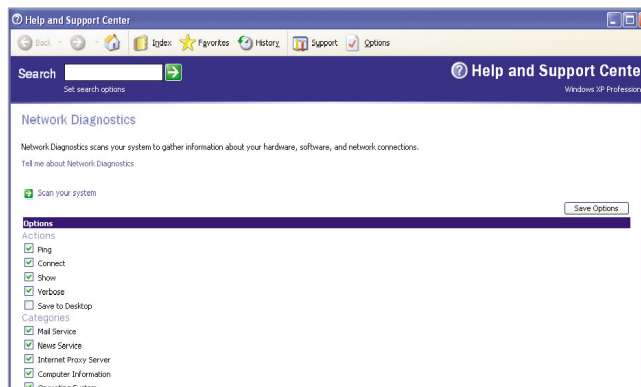
Information, Operating System, Windows Version, Modems, and Network Clients. These selections are most useful for communicating basic information about your system to a tech support representative who wants to learn more about your computer's features.

Net Diagnostics also lets you select Categories that can tell more detailed information about your network hardware and configurations. Network Adapters

will list all of the network adapters on your network. By selecting Ping, you can also ping each of the network adapters and see the results. Domain Name System (DNS) will ping the DNS servers for each of the network adapters. The Domain Name System (DNS) operation is especially useful in troubleshooting if you appear to have an Internet connection but cannot access Web sites or other online content. You may also select the Dynamic Host Configuration Protocol (DHCP), Default Gateways, Internet Protocol Address, and Windows Internet Naming Service (WINS) to ping these additional servers and addresses and gain more troubleshooting data.

Start The Scan

After you've selected the items you want to analyze, click Scan Your System. Then wait for Net Diagnostics to perform the requested actions. When it is done, it will display an on-screen report with the results of the scan. If you chose Save To Desktop in the Scanning Options, you will also find a copy of the scan results saved to a file on your Desktop. Generating detailed reports about your system, its network-related hardware, your network configurations, and various servers is that simple. WinXP's Net Diagnostics can provide you with a lot of clues to what ails your network connection. ■■



Change the options within Net Diagnostics to obtain the information you need.

BY KYLEE DICKEY

Set Up A Simple VPN In WinXP

It's Easier—& Cheaper—Than You Think

Traditionally, VPNs (virtual private networks) were only used by big companies to network their offices and branches. Setting up a VPN was expensive and complicated, but it was also a safe and secure way for out-of-office employees to tap into their company networks. As client software has been made readily available on Windows XP, smaller companies, as well as individual home users, are exploring the possibility of building a VPN. Today, any SOHO (small offices/home office) can take advantage of the security, flexibility, and remote access afforded by a VPN. It can still be somewhat complicated to set up, but with a little patience and guidance, it doesn't have to be an especially arduous endeavor—really, anyone can do it.

What Is It & How Does It Work?

A VPN is a network that links computers together through another network at endpoints. The endpoints are a central server and any number of remote machines. It's essentially a secure, closed network that tunnels through a much larger WAN (wide-area network). The most well-known example of a WAN is the Internet. Like a wire through a conduit, the VPN is a connection that tunnels through a much larger connection and is shielded by various layers of security.

Once a VPN has been established, all computers in a home or office can be linked together over the connection. Additionally, VPNs facilitate remote access by a computer in one location or an entire office branch in another part of the country to a main office. By **tunneling** (a network protocol that encrypts information so that it can be sent securely over a public connection, such as the Internet) the information that is transmitted between sources, the VPN can function safely and efficiently, helping a business—or a home network—become more nimble and productive.

Because the vast majority of VPNs operate via the Internet, there is no infrastructure to worry about. The network's infrastructure—the Internet—is already built; this saves a mountain of money in setup costs. All you have to do is gain access and secure your tunnel.

A VPN uses a router or firewall as a gateway to allow a user access to the network. Once a user is logged on, the data and information can flow freely. It's like riding a wave; the ocean (infrastructure) is already there, and all you need to do is hitch a ride (log on).

Advantages Of A VPN

There are a number of advantages to using a VPN for your home or business, not the least of which is security. Using L2TP (Layer Two Tunneling Protocol), currently considered to be the best way to transmit data over a VPN, data is protected by IPsec (Internet Protocol Security). By operating at the network layer instead of the transport layer (as many other Internet protocols do), IPsec offers greater flexibility. Support for L2TP/IPsec is built into WinXP, which makes creating a VPN with these settings much easier as you don't need to worry about obtaining these protocols.

VPNs offer a variety of security features including encryption of data, authentication of users, and data integrity. These tools help ensure only authorized computers are connected

to your VPN and that the data that is sent between endpoints is both confidential and tamper-free.

As businesses adapt to the demands of operating in the 21st century, more and more companies are using remote workers—employees who do not necessarily come into the office every day. Remote workers can also be individuals who conduct freelance or contract work; such employees don't necessarily warrant office space but nevertheless may need access to a business' network, at least for a certain period of time. Many of these virtual employees work from home or on the road in hotels and airports, and it is crucial that they stay connected to the main office. With a VPN, they can email, instant message, and exchange data as if they were across the hall instead of across the country; all they need is access to a LAN (local-area network), a broadband Internet connection, and client software (which, in our example, is built into WinXP).



The New Connection Wizard will take you through the steps to establish a VPN server.

Remote workers, whether they're working from home or in another office branch, can communicate clearly and efficiently with other employees at the main office. They can schedule meetings where a number of other employees can interact freely by video or instant message. Such flexibility increases productivity, to be sure, but it also widens the base of potential hires for a business because the employee would not necessarily have to relocate to join the company.

Setting up a VPN connection between your home and an office network is a great idea—it will help your work from home be more connected and productive. Small or home business owners can also benefit a great deal from a VPN as it allows them to inexpensively and securely network their business, home office, and laptops so they can operate freely in any location.

Just like in any network, file and folder sharing between local and remote users becomes a simple task. Even remote printing—on a printer that is on the network—is simple with a VPN.

How To Set Up A VPN Server

If your company already has a VPN set up, you can skip this section and jump straight to the How To Configure VPN Client Machines section.

To begin setting up a VPN, you will need four components: two endpoints with VPN capabilities, a broadband connection (dialup is too slow for any practical use), a **gateway** (a catch-all term for routers and firewalls, which should already be part of your broadband connection), and client software to make everything work together.

An endpoint is a computer that remotely accesses the network or the server on which the network operates. Each endpoint needs a gateway to transmit data over the network.

Gateways are the hubs that allow the network to function within the Internet. They connect endpoints together through the Internet, transmit data, and help maintain security. Routers and firewalls are devices that serve essentially that same function, although firewalls are more popular for VPN applications because they tend to come loaded with more security features.

The broadband connection must be acquired through a subscription to an ISP (Internet service provider), and it must be an always-on connection. When on the road, you can also use free Wi-Fi hotspots when they're available. Technically, you can use a dial-up connection, but dialup is painfully slow—not nearly fast enough to facilitate the goings on of a healthy VPN—and is only connected at certain times, which severely limits accessibility. This step should be the easiest to

cover because a large and growing number of homes and offices already have broadband connections installed. If you don't have a broadband connection already, check with your local cable provider about getting a subscription.

Client software is needed for a gateway device to understand the VPN protocols; otherwise, connecting to the network would be impossible. There are a number of reliable third-party applications that can accomplish this, but in an effort to keep the VPN setup as simple as possible, you can just use the built-in options in WinXP.

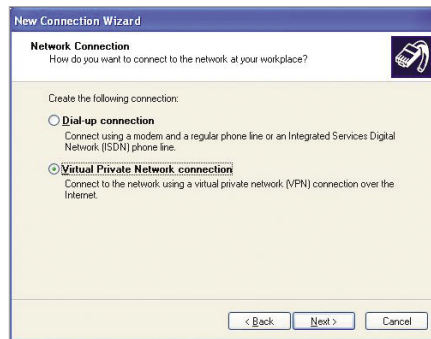
WinXP makes setting up a VPN server relatively simple. Click and then click Control Panel. Once Control Panel is open, double-click Network Connections and then click Create A New Connection, which will open the New Connection Wizard. Click Next and then select the Set Up An Advanced Connection

radio button and click Next again. On the next screen, select the Accept Incoming Connections button and click Next. Then you will be asked to select the devices your computer uses to accept incoming connections; don't check anything and advance to the next screen. After you select the Allow Virtual Private Connections button and click Next, check the boxes of all users that you want to have access to the VPN and then advance to the next screen. A number of boxes in the Networking Software section should be checked. If you have your modem or network card already installed on your computer, you shouldn't need to change anything on this screen, so click Next; click Finish to close the New Connection Wizard.

You still need to be sure that the data transmissions on your VPN will be encrypted. Back in the Network Connections window, right-click Incoming Connections and then select Properties. Click the Users tab and check the Require All Users To Secure Their Passwords And Data box. Click OK to close the window. Your VPN server setup is complete.

Before any client machines are configured for a VPN, the gateway device that the machine will be connected to must be configured properly. Configuring the router or firewall will vary depending on which type and brand you purchase, but whatever the device, it will come with instructions on how to set it up.

One consideration you will need to make is what type of IP (Internet Protocol) address you have. Most home networks have a dynamic IP address; this may be a problem for remote access because the remote computer doesn't have a static IP address to look for. You may need to acquire a dynamic DNS (Domain Name System), which attaches a static



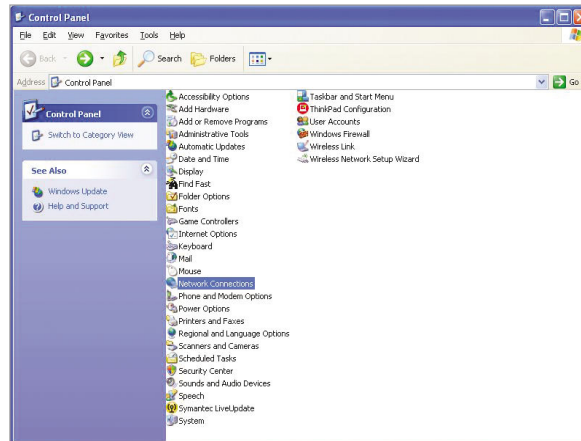
Select Virtual Private Network Connection to set up a connection on client machines.

domain name to a dynamic IP address that the remote computer can use to access the network. To obtain a DNS, go to tinyurl.com/bte78 and have the company assign one to your VPN.

Once you've configured your router or firewall, there will be some important information that you will need to have on hand to configure client machines: a preshared key, VPN tunnel/connection name, VPN device IP address, and LAN subnet mask. This information can be acquired while setting up the gateway device.

How To Configure VPN Client Machines

Now that you have an existing VPN, you need to set up client machines to be able to access the network. Click Start and then click Control Panel. Once in Control Panel, double-click Network Connections. Click Create A New Connection to open the New Connection Wizard. Click Next, select the Connect To The Network At My Workplace radio button, click Next again, and then select the Virtual Private Network Connection button. Once you advance the screen, you will be asked to name the network. You can name it anything you want; it's simply a label for you to remember what network it is. Click Next, select the Do Not Dial The Initial Connection button, and then click Next again. On this screen, if your server has a static IP address for you, enter it here; otherwise, enter the dynamic DNS you set up for your server. Click Next, select who has access to the connection (you probably want to check My Use Only), and click Next again. Check the Add A Shortcut To This Connection To My Desktop box and click Finish to close the wizard. If a Connect Test dialog box appears, close it—you will test the connection after the next step.



Double-click Network Connections to gain access to VPN setup.

Back in Control Panel, open a list of your network connections by double-clicking Network Connections. Locate the VPN and right-click it. When the dialog box appears, click Properties, click the Security tab, and select the IPsec Settings button. Check the Use Pre-Shared Key For Authentication box and enter the requisite preshared key from the gateway configuration. Save your new settings and close the window.

How To Test The Connection

To test your VPN's remote connection, log on to the Internet and disable any software firewalls on the remote machine. Launch the VPN network from its Desktop icon. Make a username and password and then click Connect. If you connect, you're done. If not, go back and check your configurations for typos or misspellings, and also that all the information matches. It's also possible that the gateway device needs its own software (which will come with the device) to connect and won't work with WinXP's built-in capabilities.

Seriously, You Can Do This

A VPN is an excellent way to give remote access to a network. The connection is secure, and these days it's also inexpensive; all you need is a router or firewall at all endpoints (which may already exist if you're accessing a Wi-Fi hotspot away from home). Such devices cost no more than a few hundred dollars; so set up a network, set up firewalls where you need to, and become more secure and efficient with the VPN experience today. ■

BY SETH COLANER



Data flows from a remote computer to a main computer and back again by creating a tunnel via a router or firewall through the Internet. The tunnel allows remote users to print, share files and folders, check email, and send documents as if they were in the office instead of on location.

All About RAID

Make Multiple Hard Drives Work Together



You've probably heard about RAID and probably even know that it involves hard drives and storage—but let's examine what RAID is and what the various levels mean, explore what RAID can do for you, and explain how to implement a RAID setup.

What Is RAID?

RAID stands for redundant array of independent disks (or drives). The basic idea and technology behind RAID is based on the use of multiple hard drives that behave as if they were one. The concept as applied to PCs has been around for about two decades and was popularized by companies such as Promise and HighPoint in the '90s. In the last five years, after Intel incorporated RAID technology in its motherboard chipsets, RAID has achieved mainstream status.

RAID data storage schemes provide increased data integrity and/or performance by using multiple hard drives managed by specialized software in an operating system or on a chip or adapter called the RAID controller. A **RAID controller** is a hardware (microcode) interface between the operating system and the hard drives, directing all the operations of the hard drives in order to read data from and write data to the various drives that are part of the array.

RAID Levels

By convention, there are at least seven somewhat standardized RAID levels that identify the type and specifications of the array. Here's a brief description of three key RAID concepts and the most common and relevant levels:

Striping is when the RAID controller reads or writes data stored across multiple hard drives, which share the data storage and retrieval responsibilities. Thus, performance can be enhanced because the controller can alternate storage and retrieval of data blocks between the drives, keeping each of them busy and minimizing **latency** (time spent waiting for a single drive to complete its assigned operation).

Mirroring is when the RAID controller creates redundancy by writing the same data to multiple hard drives simultaneously. Thus, the redundancy ensures that your data is always backed up and protected. For example, if one of the drives goes down, the controller notifies the user that one of the drives is no longer operative but proceeds to use the remaining good drive(s) to ensure uninterrupted computing.

Error correction is when data is stored in multiple places in various ways such that problems can be quickly detected and data can be reclaimed and reconstructed as necessary (known as fault tolerance). This is done by using parity-checking. **Parity** is a method of double-checking stored

data that requires additional storage space for the cross-checking information. Because it uses extra storage space which must be managed, it is slower than a nonparity system.

RAID 0 indicates a striped array without fault tolerance, providing increased performance and volume capacity at the cost of decreased reliability. A minimum of two drives is required, and the capacity of the resulting RAID volume will be the combined capacity of the two drives. However, if either of the two drives fails, all of the data on the array (both drives) is lost. The price of the improved performance, then, is the increased probability of data loss.

RAID 1 indicates a mirrored array, providing fault tolerance without parity, at the cost of volume capacity and a small performance penalty when writing. A minimum of two drives is required, and the capacity of the resulting RAID volume is the same as one of the two drives. If one of the two drives fails, however, the other keeps working, although without fault tolerance, until the failed drive is replaced and the array is rebuilt. The price of the fault tolerance, then, is one of the two drives, which is dedicated to mirror the other drive.

RAID 10 (or RAID 1+0) indicates an array that is both mirrored and striped, providing performance improvements and fault tolerance, at the cost of volume capacity. A minimum of four drives is required, and the capacity of the resulting RAID volume is equal to the sum of the capacity of two of the four drives. If any one of the four drives fails, the high-performance volume remains available, although without full fault tolerance until the failed drive is replaced and the array is rebuilt. The price of the performance gains and fault tolerance, therefore, is two of the four drives, which are dedicated to mirror the other two striped drives.

Other levels. RAID 0+1 is the same as RAID 10 (RAID 1+0) except for one minor difference: The drives are striped first and then mirrored instead

of being mirrored first and then striped. RAID 0, 1, and 10 are the levels of practical value to most consumers. Other RAID levels are used in enterprises to provide specific benefits for specific applications. RAID 2 is obsolete, using an obscure error correcting method named “hamming.” RAID levels 3, 4, 5, and 6 involve using parity to provide error correction and are differentiated by highly technical details and the relative trade-offs of each approach. Other levels, such as RAID 50, are even more obscure and are sometimes even proprietary.

Implementation Considerations

Most RAID configurations in consumer implementations are typically based on pairs of hard drives. Some controllers also support multiples of those pairings; for instance, four-drive striped or mirrored configurations or eight-drive striped and mirrored configurations. Practically, this means that you’ll need to purchase at least four drives if you want the dual benefits of RAID 10—fault tolerance and an increase in drive performance—but you’ll have the capacity of only two of those four drives.

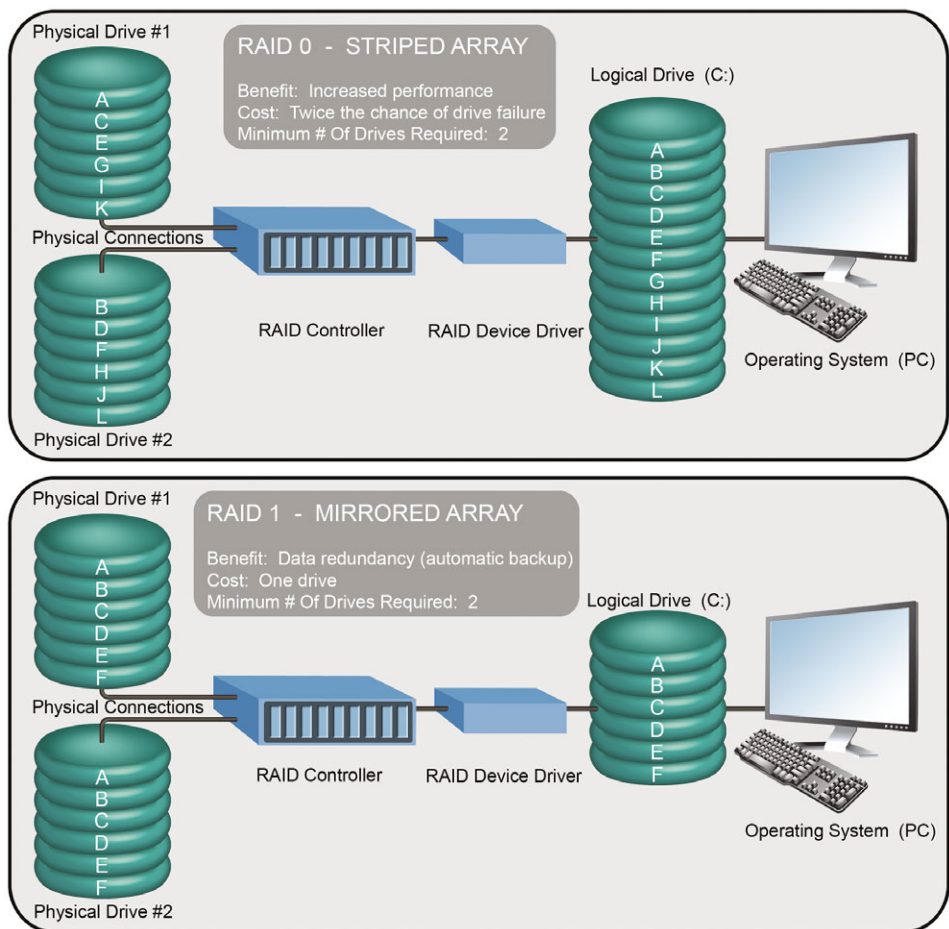
RAID controllers are the hardware brains that make mirroring, striping, and error correction possible using ordinary hard drives. RAID controllers come in various form factors, but are most commonly found on motherboards or as adapters that plug into a free slot on motherboards that don’t have built-in RAID support. In either case, separate RAID-specific connectors are required that enable ordinary hard drives to be cable-connected to those connectors and to then be configured and managed by the controller.

Your objectives and budget will drive your decision as to whether RAID will serve your

interests. If you’re willing to buy two drives and want the capacity of both to be available to you, and if you value the performance gains, productivity improvements, and time savings you can enjoy through striping but see the price of two drives as being too high to pay for the fault tolerance you might otherwise want, then you’ll want to implement a RAID 0 (striped) setup. On the other hand, if you don’t have much need for better drive performance but are willing to pay the price of one drive to have the peace of mind that comes from knowing that your data is protected through what amounts to ongoing and automatic backups, then implement a RAID 1 (mirrored) setup with two drives. You’ll have the capacity of one (automatically backed up) drive available to you. If you place high value on both the performance improvements of striping *and* the fault tolerance of

mirroring, then you’ll want to buy four drives and implement a RAID 10 (mirrored and striped) setup, even though you’ll only get the increased capacity of two of its four drives.

In theory, recovery after the hardware failure of a single drive when using RAID 1 or RAID 10 should be as simple as replacing the failed drive and triggering a rebuild of the array. In practice, however, it can be more difficult. Support technicians are generally necessary, because RAID recovery methods vary. Some RAID vendors offer no-charge support for recovery, and others do not. You’ll want to check the vendor’s support terms before you start the process of implementing a RAID setup, because without reasonable prospects of data recovery, using RAID doubles or even quadruples the probability that you will lose all data on the array, or virtual drive.



Once you determine the benefits of improved drive performance and fault tolerance, however, setting up and configuring a RAID is something you can probably do on your own.

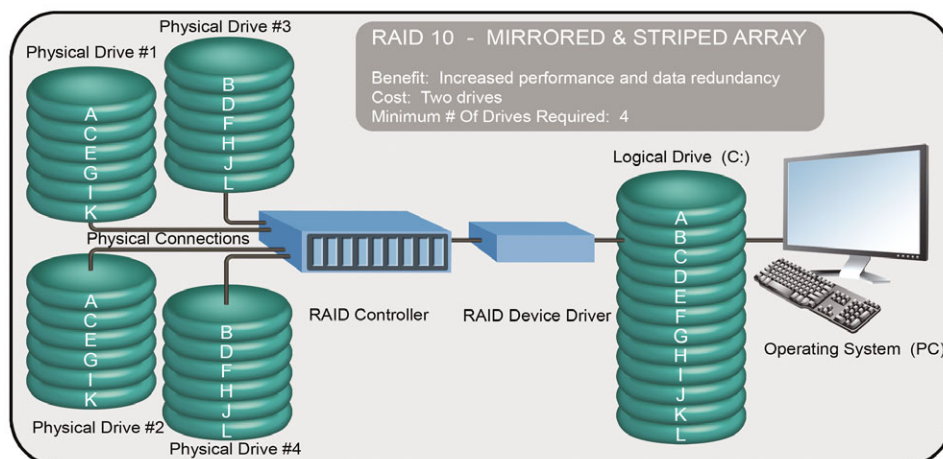
If the system you purchased or plan on purchasing already has a RAID controller, then you're halfway there. If not, then you'll probably want to simply add a RAID controller adapter to your system. In either case, determine whether the RAID controller supports the older IDE (Integrated Drive Electronics) drives or the newer SATA (Serial Advanced Technology Attachment) drives because you'll need to get hard drives to match. Also, be sure that the controller supports RAID 1+0 or 0+1 if you've decided to use four drives to have both striping and mirroring. Some RAID controllers have only two connectors and support only RAID 0 or RAID 1.

You'll then want to purchase the new drive or drives that will comprise your new RAID. Make sure that all of the drives you purchase for any level of array are all 100% identical and match your existing drive (if you plan to use your existing drive as part of the array). Also, be aware that it's possible that an older drive could be connected to an IDE controller on a motherboard that sports a SATA RAID controller, so be sure your new drive's type (IDE or SATA) matches your RAID controller.

You'll want to also make sure you obtain, read, and follow the RAID controller's instructions. The setup process described here is general, so be sure to refer to the documentation specific to your system. If you can't find any such documentation, look online for it or contact the manufacturer. If you can't obtain such documentation, you probably shouldn't proceed.

Set Up A RAID

Once you've planned and prepared as described, the first step is to back up the existing drive(s) on your



system, or make certain that you'll be able to reinstall your system to its factory state and preserve all important data on the drive you'll be replacing. In most cases, there will be one C: drive you'll want to restore. True Image 11 from Acronis (\$49.99; www.acronis.com) is one recommended product for imaging your existing drive and then restoring that image to the RAID after you've installed and configured it. Another choice to consider, especially if you're looking to migrate to Windows Vista at the same time, is to simply reinstall Windows and your applications and data after you've created your RAID.

When you're confident that your system backup can be restored or that you can fully reinstall and re-create the drive you're replacing, then you need to open your PC case and install the drives that will comprise the array, plugging them in to the connectors on the RAID controller with the appropriate IDE or SATA cables. In the beginning, it doesn't matter which drive is connected to which connector, because all of the drives are identical.

After the drives are installed and connected, reboot your system and observe the startup process to make sure the RAID controller is recognized by the system, adjusting any BIOS (Basic Input/Output System) settings related to RAID, as necessary. Enter the RAID controller setup menus by pressing the appropriate key combination during system startup. Ensure that the BIOS

and the controller recognize each of your newly installed drives. Next, follow the instructions for your controller to create the array for the level.

Once you create the array, the controller knows how to treat the installed drives to make the system think it has only one drive installed. Please note, however, that in the process of creating the array, all of the data on each of the drives in the array is lost. The primary drive in your system is now a RAID that has the capacities and characteristics you desire, based on the capacity of the drives installed, the RAID level you chose, and the number of drives on the array. For example, if you have two 160GB drives in a striped (RAID 0) array, your single new drive created from the array will have a capacity of 320GB. If you have two 500GB drives in a mirrored (RAID 1) array, your new drive will have a total capacity of only 500GB. If you have four 300GB drives in a striped and mirrored (RAID 1+0) array, then your new drive will have a total capacity of 600GB.

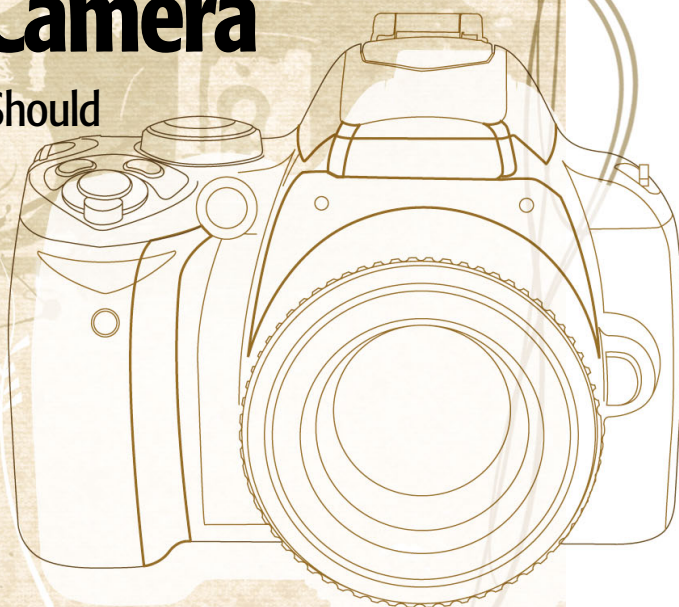
Begin Again

Finally, restore your backup image to the newly created drive or reinstall Windows and your applications and data and start clean. That's it! Enjoy the benefits of your new redundant array of independent disks. ■

BY DAVE WHITTLE

How To Buy Your First Digital SLR Camera

What You Should Know



D-SLRs (digital single-lens reflexes) differ from point-and-shoot cameras because they allow photographers to have better control over the image they want to achieve. With that said, you don't need to be a professional photographer to own and operate a D-SLR—you only need the desire to take high-quality photos. Here, we explain the most important things to know as you shop for your first D-SLR.

Exposure Controls

Exposure controls allow you to manually control the camera's aperture and shutter speed, which work in tandem to control your **depth of field** (the parts of a scene that stay in focus) and **exposure** (the amount of light that falls on a camera's image sensor). **Aperture** controls the camera's lens diameter and how much light will hit the **image sensor** (a chip inside your camera that captures images just like

film). When your lens has a large opening, more light hits the image sensor, making your image sharper. You'll find that a camera's aperture is measured in f-stops, and the smaller the f-stop number (or f/value), the larger the lens opening will be. **Shutter speed** dictates the amount of time light is exposed to the image sensor. A quick shutter speed is important when you're photographing at athletic events; it will ensure you don't miss a shot or have blurry images.

ISO speed ratings determine how sensitive your camera is to light. For low-light situations, you will need a higher ISO rating, which makes your camera more sensitive to light. A word

of caution: High ISO settings can make your photos look grainy (also called noise); however, you can avoid noise by purchasing a professional-grade D-SLR with a large image sensor. ISO speeds are generally around 100, 200, or 400, but more expensive models can get as high as 6400. To give you a better idea, ISO 100 is considered the "normal" setting and will work best in bright or well-lit environments. An ISO of 400 or more is used to take a photograph in low-light settings without a flash. Speeds of 1600 and more are used by professionals for artistic purposes.

Optical Features

The difference between optical zoom and digital zoom on D-SLRs can be confusing to consumers. **Optical zoom** changes the focal lengths of the camera lens. With **digital zoom**, the camera uses software to crop out a portion of an image, enlarges it, and fills in missing pixels, which can sacrifice your image quality. Unlike D-SLRs, point-and-shoot cameras offer mostly digital zoom capabilities with limited optical

zoom. If you purchase your D-SLR as a kit (a D-SLR body and lens packaged together), your kit lens will likely have a limited optical zoom lens. But if you're interested in **macro photography** (taking pictures of faraway objects, such as wildlife in a distant setting), you may want to purchase a telephoto lens, which will be sold separately.



The Nikon D40x is a great digital SLR for beginners, because it's affordable (\$679.95 [body only], \$749.95 [kit]; www.nikon.com), lightweight, and has easy-to-use automatic features.

Image Sensors, Megapixels & Resolution

What sets digital SLR cameras apart from traditional film SLR

(single-lens reflex) cameras are image sensors. Image sensors consist of pixels that interact with light to create your image. The two common types of image sensors are CCD (charge-coupled device) and CMOS (complementary metal-oxide semiconductor).

Many first-time D-SLR buyers make the mistake of looking for a camera with the highest megapixel count, because they assume that more pixels means better image quality. While the number of megapixels is important, you probably won't need a D-SLR with anything more than 7 or 8MP (megapixels). Megapixels don't increase the quality of the image, but rather they make the image bigger in size for printing purposes. For example, if you want to create crisp, clear 8- x 10-inch prints, a camera with 7 or 8MP will suffice. If you wish to create poster-sized prints for artistic or professional use, consider finding a D-SLR with 10MP or more. Optics and exposure settings—aperture, shutter speed, ISO speed, etc.—often outweigh a D-SLR's megapixel count by more serious photographers

Menus & Modes

The LCD is where you'll view your D-SLR's menu and photos, so be sure the menu is easy to access, understand, and read. LCDs will vary in size, and they can be anywhere from 1.8 to 3.5 inches. Your screen should be big enough for you to view your photos clearly because you will be using it to play back your images. Traditionally,

D-SLR models require you to look through the optical viewfinder, but some newer models let you use the LCD as a viewfinder to frame your pictures like you would with a point and shoot. Another factor to consider is LCD washout, which can happen when sunlight hits your screen. Some models have special LCDs made to avoid washout.



The Olympus EVOLT E-510 Digital SLR (\$999.99; www.olympus-america.com) has a crisp, clear LCD, making it easy to view your images.



This 18-55mm lens from Nikon is similar to what you might get if you buy a kit (camera body with the lens included). This will be sufficient until you become a more advanced photographer.

When you are first learning how to use a D-SLR, it can be difficult to know how to adjust the camera correctly in manual modes. Most models have preset modes that automatically adjust your camera in different conditions. Modes can include landscape, portrait, action, night, and macro.

Memory & Storage

When budgeting, don't forget to purchase external memory cards; usually the D-SLR's internal memory isn't sufficient enough to use. The two most common types of memory cards are CF (CompactFlash) and SD (Secure Digital), but there are plenty of others available on the market. Your camera's users manual will tell you what kind of memory card you need to buy.

Accessories

D-SLR cameras are a big investment, so be sure you get the right accessories. Purchase a bag that has plenty of compartments, because when you travel with your D-SLR, you will want to carry extra lenses, batteries, and a soft cleaning cloth. Also, consider where you'll be going with your camera. If

Camera Box Acronyms

As you research D-SLR (digital single-lens reflex) cameras, you might run into a few acronyms you are unfamiliar with. Here are some definitions that will help you as you shop for a D-SLR.

AF—Automatic Focus: The function that automatically focuses your camera.

AE Lock—Automatic Exposure Lock: The ability to lock the exposure settings (aperture and shutter speed) over a period of time.

CCD—charged-coupled device: A type of image sensor. The name refers to how the image signal is read out from the chip.

CMOS—complementary metal-oxide semiconductor: This type of image sensor uses integrated circuit technology commonly used in electronic chips.

EV—Exposure Value: The amount of light hitting the image sensor when you combine shutter speed and aperture.

ISO—International Standard for Organization: For a D-SLR, the ISO setting determines how sensitive your camera is to light.

LPF—Low Pass Filter: This is the type of filter used by most D-SLR cameras. It eliminates unwanted high-frequency noise and interference.

MF—Manual Focus: A function that allows you to focus the lens manually.

TTL—Through The Lens: This is used in conjunction with any metering system that works through the lens.

you plan on taking it with you on your annual biking trip, you may want to find a bag that functions like a backpack.

Most cameras will come with a proprietary battery, but you may want to purchase a second for backup. Battery life is affected by features such as the LCD and flash, so it's hard to tell exactly when your battery will give out on you. You don't want to realize your battery has just died the next time you want to snap a beautiful shot. ■

BY TESSA WARNER BRENNEMAN

Many of our readers come across fast, easy ways to solve a problem or accomplish a task. Well, we'd like to hear about it! If you have a great tip you'd like to share, please email us at readertips@smartcomputing.com. If we print your tip, we'll send you a free *Smart Computing* T-shirt. You'll be the envy of all (well, some) of your friends.

Please include your first name, last name, and address so that we can give you credit if we print your tip. (And so that we can send your T-shirt to you, of course.) Please limit your tip to 200 words or fewer. Not all tips received will be printed, and tips may be edited for length and clarity.

Helpful & Easy Fix-It Tips & Reminders

Don't Forget The Restore Point

Please be *extremely cautious* if you are prompted to use the Norton Removal Tool. Be sure to create a restore point and/or back up all of your files beforehand. I had the misfortune to use it, and it removed essential files so that Microsoft Windows Search Companion would not work, and I could not upgrade Windows Messenger to the 5.1 version. I spent five days and more than 24 hours working with Microsoft technical representatives before they could finally install the missing files.

Pat D., Norland, Ontario



Restore The Sound

I recently had to reformat my hard drive and reinstall Windows XP Pro. After reinstalling some of my programs, including Tweak UI (User Interface), I could not get startup or shutdown sounds. It took me a week to suddenly remember that in Tweak UI's General options there was a Beep On Errors command that I had not checked. After checking the box, the startup and shutdown sounds were restored. I remember reading this a few years ago and had forgotten it completely. I guess it's just a case of remembering to do the simple things.

George P., Nepean, Ontario

Make Your Own Web Page

Some time ago I started learning HTML (Hypertext Markup Language) to make a free personal Web page provided by our ISP (Internet service provider). Learning HTML was not too difficult, but positioning everything properly was time-consuming. I wanted pictures, text, and icons in specific places on my pages, and that was a challenge. Then I found Nvu (free for personal use; www.nvu.com), downloaded it, and am using it for making our Web pages.

Nvu is a WYSIWYG (what you see is what you get) HTML editor that makes it easy to format a Web page; insert links, text, and images; and then save it as HTML (or publish it to the Web). Nvu has an FTP (File Transfer Protocol) client built in that works well, but I prefer using Core FTP (free; www.coreftp.com) because it gives me more control over my uploads. Learning HTML first was helpful for troubleshooting, but Nvu saved me a lot of time formatting.

Albert W., Bushton, Kan.



Keep Your Desktop Tidy

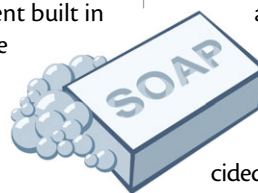
One day I looked at my Desktop and saw it covered with shortcuts. So, I right-clicked my mouse on an empty part of the screen, selected New, and clicked Folder. The New Folder icon opened on the Desktop. I then dragged all the shortcuts into it. Now when I want to run a shortcut to a program, I open New Folder and click the corresponding icon.

Richard C., Melville, N.Y.

A Soapy Solution

I had a printer roller that would no longer grab paper. I tried cleaning the roller with alcohol and using sandpaper to roughen it, but nothing worked. A friend of mine told me that her father used to rub a dry bar of soap on the fan belt of his old car to keep it from slipping. Skeptical, I decided it was worth a try. It worked! My printer now feeds and prints perfectly.

Tom C., Brighton, Mich.



Set Up A Home Theater

A Guide To Building Your Own Home Cinema

The days of going out to the movie theater for a flick and some good popcorn aren't nearing an end anytime soon (although the days of inexpensive movie popcorn are all but gone). Even so, many movie fans are turning to a different type of theater when they want to watch a movie. Thanks to expanding TV sizes and rapidly falling electronics prices, many movie buffs are building mini theaters into their living rooms and rec rooms.

Anatomy Of A Home Theater

Home theaters can get complicated (and extremely expensive) very quickly. In fact, there are home-theater installation services across the country that can run wires through your walls and floors, install tiered seating, and build high-end subwoofers and speakers into your walls to create the sort of home theater your neighbor dreams about. That said, the typical home theater doesn't require room redecorating teams or highly paid consultants.



The typical home theater includes a TV, a DVD player, an A/V (audio/video) receiver, and a speaker system. Although you probably recognized most of the devices in that list, you may not be that familiar with the receiver. A receiver, which looks much like an oversized DVD player, takes responsibility for routing signals among the other devices in the home-theater setup. As a result, the back of the receiver has tons of ports for a variety of cable types.

When you shop for a home theater, you can mix and match components. As long as your other devices have the right ports (and you have the right cables), the receiver can work with speakers, TVs, and DVD players regardless of brand. Rather than researching and selecting individual components, however, many movie buffs prefer to buy an HTB (home

An HTB (home theater in a box) gives you almost all the equipment you need to turn your living room into a theater. Don't forget to pick up a TV.

theater in a box), which is a kit that includes a DVD player, receiver, and a set of speakers. The HTB makes your purchase a snap—you simply choose the HTB you like, and you have everything you need (aside from a TV) to set up a home theater in your living room this weekend.

HTBs also usually simplify the setup process by including a DVD player/receiver combo device, rather than separate DVD player and receiver units. Although the DVD player/receiver may not have as many features as that standalone receiver you were eyeing at the other end of the store's Home Theater section, it can handle your TV and the HTB's audio equipment without trouble.

It Takes TV To Tango

Your new HTB (home theater in a box) includes everything but the kitchen sink—and a TV. If you find yourself pausing by those fancy new flat panels at your local electronics store, you'll notice that the specification stickers list resolutions. Most widescreen TVs boast 720p, 1080i, or 1080p resolutions, and there's enough image-quality difference among those three to affect the price of the TV you're thinking about buying.

All three resolutions are HD (high-definition) resolutions, but the highest resolution, 1080p, offers much crisper images than you'll find in a 720p or 1080i TV. The letters indicate the way that the television provides images. Progressive-scan (p) TVs offer higher-quality images than interlaced (i) TVs. Keep the resolution in mind when you wonder why that one 42-inch beauty costs so much more than the same TV right next to it. ■

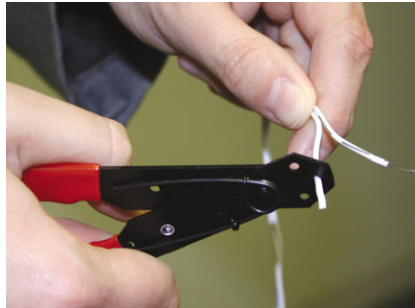


Build Your Own Cinema

The HTB makes life much easier for the movie buff who doesn't know the finer details of buying and installing an audio system. Even so, setting up an HTB isn't a piece of a cake. We'll walk you through the steps to set up a standard home theater in a box, and we'll give you some pointers that you may not find in your HTB's instruction manual. We'll use Yamaha's DVX-C770 (\$549.95; www.yamaha.com), which includes a 5-disc DVD player/receiver and a 5.1 surround-sound speaker system, as an example.

Step 1: Position the speakers. Although you can dig up HTBs that have more (or fewer) speakers, the 5.1-speaker package is the most common HTB setup. When you pull your speakers out of the HTB box, you'll discover that the setup actually includes six units: the five surround-sound speakers and a subwoofer (hence the .1). Assuming that you've already chosen a location for your TV and your couches or chairs, you're ready to place your speakers. When choosing locations for the speakers, make sure that they point toward the "sweet spot," which is the area in which you plan to sit.

Start by placing the center speaker, which is generally wider than its siblings. The center speaker is the most important of the pack, as it provides much of the audio, including human voices. You can place the speaker above



Wire strippers are inexpensive (you can find a multigauge stripper at a hardware store for under \$15), and they remove the wire's rubber sheathing without damaging the wire threads inside.

or below your TV without sacrificing sound quality. Next, place the front left and right speakers on either side of the center speaker. Check the HTB's instructions to determine how far the speakers should sit from the center speaker (as a rule of thumb, set them at least 6 feet from the middle speaker).

Place the rear right and left speakers behind and, if possible, slightly above you. Chances are that your rear speakers are designed to sit on a shelf or be attached directly to the wall. The subwoofer should sit on the floor near the TV. The subwoofer supplies bass and gives the movie's audio a realism that ordinary TV speakers can't provide.

Step 2: Connect the speakers. Once you've placed the speakers, you're ready to connect them to the ports at the back of the subwoofer (or receiver, depending on your HTB). Your HTB

may include individual wires for each speaker, but many (including the Yamaha DVX-C770) include one long speaker wire. Thanks to the single wire, you can cut it so that you have just enough wire running from the speaker to the subwoofer.

Start by running the speaker wire from your subwoofer to the center speaker. If you plan to run it along the wall baseboard or up the wall, do that now, leaving a foot or so of slack at either end so that you can easily plug the ends into their respective ports later. Cut the speaker wire with a knife or scissors.

Unless the HTB includes individual wires that have preattached plugs, you'll need to strip the ends of the wire so that the copper threads are exposed (your HTB's manual may not include wire-stripping instructions). You can remove the protective rubber coating with a knife or scissors, but you risk damaging the threads inside. We recommend using a wire stripper, which is available at many electronics and hardware stores.

Before you strip the wire, take a close look at it. The wire actually has two cables that are attached to each other via the rubber coating. You can untwist the end of the cable to separate them (separate only an inch or two of the wire). Next, place the stripper over one of the cables about a half-inch from the end, squeeze, and then pull the stripper toward the end

Banana-Plug-Rama

Some manufacturers use 5-way binding post connectors instead of the traditional clamp connector that clamps onto the bare speaker wire. You'll know you have one of these connectors because it has a nut instead of the button that would normally release a clamp.

As its name implies, you have several options when it comes to attaching speaker wire to the 5-way binding post. The easiest two methods involve wrapping the bare speaker wire around the post or threading the wire through the hole in the center of the post, but many people prefer to use banana plugs. The plugs let you easily connect and disconnect the speaker wire from the speakers (a handy feature if you plan to disassemble the HTB from time to time) and offer some protection against

wire corrosion (not surprisingly, wire corrosion negatively impacts the quality of the audio).

Once you attach one end of the banana plug to the bare speaker wire, you can simply plug the other end into the hole at the top of the 5-way binding post. A package of two Rocketfish Gold-Plated Banana Plug sets (four plugs total), for example, will run you \$14.99. ■



of the cable. The rubber tube will slide off, exposing the wire threads. Repeat this process on the other cable, so that both cables have exposed threads.

Now, you're ready to attach the wire's two cables to the speaker's two ports. Consult your manual to match each cable to the appropriate port. Chances are the wire has markings that distinguish the two cables. The cables must match the correct ports—if you reverse them, the speaker will produce distorted, low-quality sound.

How you attach the exposed wire threads depends on the speaker's port types. Some speakers, such as the Yamaha DVX-C770, have easy-to-use spring-clip connectors. If your speaker has the spring-clip connector, simply push the connector's button, insert the cable into the exposed hole, and then let the connector snap back into place so that the cable is secure.

Another popular connector is the 5-way binding post connector. In this

case, you can quickly attach the cables by threading the exposed cable through the hole in the center of the post (don't slide it into the hole at the top of the connector) or by wrapping the exposed cable around the post.

Finally, move to the other end of the cable and attach that to the ports on your subwoofer or receiver. Here, you'll find ports for all of the speaker cables, so consult your manual to make sure you're attaching cable to the ports designated for this speaker. Attach the rest of the wires in the same way.

Step 3: Connect the DVD player. At this point, you've finished the hardest part of setting up an HTB: installing the speaker wire. Connecting the subwoofer to your DVD player/receiver and connecting that device to your TV is a snap. Many HTBs include a single cable that runs from the subwoofer to the receiver. Next, match your audio and video cables to the colored ports at the back of your TV and receiver. Plug the receiver,

TV, and subwoofer power cables into a surge protector, and you're just about ready to go.

Get Out The Popcorn

Before you kick back, you have one more task: programming the remote control. Most HTBs include a remote control that handles your new DVD player's functions and the volume by default. Unless your TV is archaic, however, you can program the remote to also control your TV, which means you won't need to juggle remotes.

To program your remote, consult the HTB's manual, which will provide instructions for activating the remote's programming feature, as well as the code you'll need to enter for your TV. Most remotes can be programmed to control devices regardless of brand. Is that the popcorn we hear popping? Sounds like it's movie time. ■

BY JOSHUA GULICK

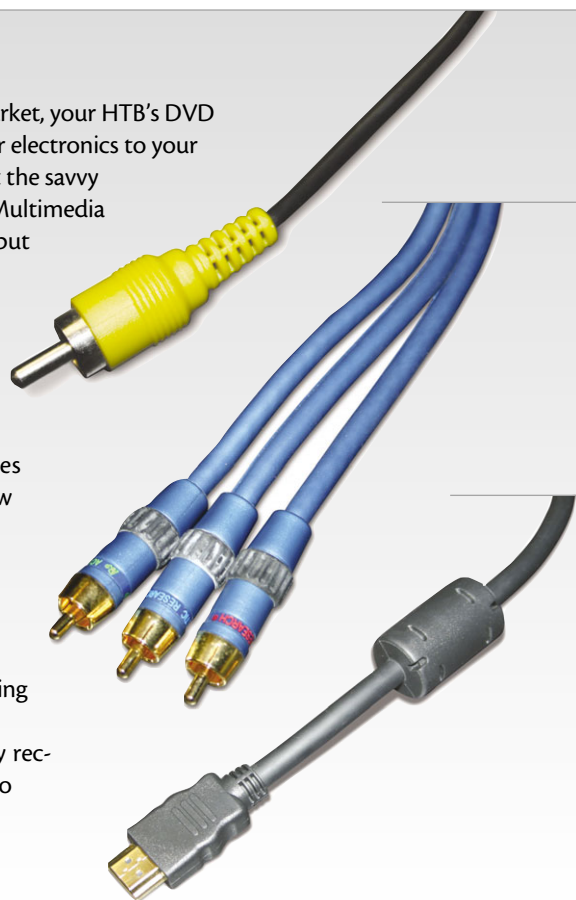
Cable Conundrum

Thanks to the glut of A/V (audio/video) connector types on the market, your HTB's DVD player is riddled with ports that let you connect your TV and other electronics to your DVD player. The HTB may include some low-end composite cables, but the savvy home-theater buff will pick up component or HDMI (High-Definition Multimedia Interface) cables before leaving the store. These cables are more costly, but they'll provide better video quality, and they're a must if you want to watch HD (high-definition) video on your new HDTV. We'll give you the basics on three popular connection types so you can make an informed decision when buying cables for your HTB and TV.

Composite. Composite cables don't deliver HD video (they limit the DVD player's resolution output to only 480i), but if you have an older TV, you may find that you can't connect cable types newer than composite cables. Composite cables generally have a yellow connector. You'll need to buy separate audio cables (which have red and white connectors).

Component. Unlike the composite connection, which sends all of the video through a single cable, the component connection requires three cables (red, green, and blue connectors). Component cables are pricier than composite cables, but they support high resolutions, including 720p, 1080i, and 1080p. You'll need to buy separate audio cables.

HDMI. If both your TV and your HTB have HDMI ports, we heartily recommend investing in an HDMI cable. HDMI cables support digital video signals at high resolutions and also include support for a high-quality digital audio signal, which means you won't need to buy any extra audio cables. ■



A Multitude Of Mac Myths

If you're new to the Mac world, there are probably many things you're still learning about OS X and the Mac in general. The number of Mac myths that circulate make it difficult to know exactly what you can and cannot do with a Mac. This month, I'd like to dispel some of these myths, separate fact from fiction, and provide some tips for those of you who are just getting to know the Mac environment.

Myth: Macs can't share files with Windows computers. Wow, this is one of the oldest and most persistent Mac myths. Many people still believe that you can't open files created with a PC on a Mac. In fact, not only are most file formats, such as JPEG (Joint Photographic Experts Group), DOC, XLS, and PDF (Portable Document Format), fully compatible with Macs, but you can even connect Macs and PCs over a network and share files, printers, and other resources between systems. If you don't have your Mac and PC on the same network, you can also use external hard drives, USB flash drives, CD-Rs (CD-rewriteables), and other storage media to transfer files between a Mac and a PC.

Myth: Macs can't run Microsoft Office. A persistent myth is that Macs cannot run Microsoft Office. In fact, not only does Microsoft offer a Mac edition of its Office suite (including Word, Excel, and PowerPoint), the company usually adds new features to the Mac edition *before* these features appear in the Windows edition of Office. For example, Word's Notebook Layout, Excel's Page Break View, and the Office Project Gallery were all tools that Mac users had months before Windows users did. Also, Microsoft Office includes Compatibility Checks to ensure that your Office documents are fully compatible with not only Windows editions of Office but also with prior Mac editions of Office.

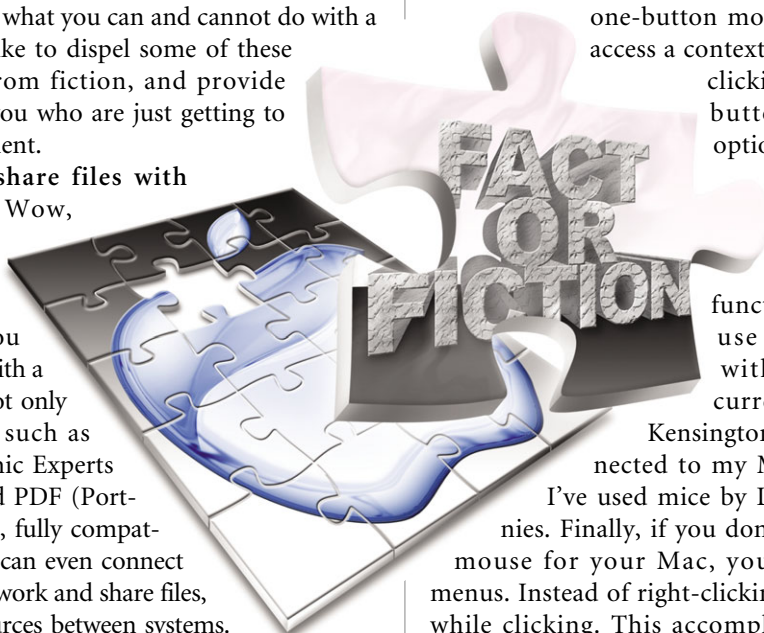
Myth: You can't right-click on a Mac, because Mac mice have only one button. It is true that Macs have shipped with one-button mice for years. In contrast, PC users have used two- and three-button mice. In fact, the right button on your mouse is so essential to navigating Windows and Windows-based applications that it would be a daunting task to count how many times we use the word "right-click" in this magazine. If you're used to right-clicking to access context menus, the thought of

using a one-button mouse on a Mac might seem like a step backward. I am not a fan of the one-button mouse design. However, I am not locked into using a one-button mouse, and there are ways to access a context menu other than by right-clicking. If you don't like one-button mice, you have a few options. First, a couple of years ago, Apple released the Mighty Mouse (\$69.99; www.apple.com), its first mouse with right-click functionality. Second, you can use almost any USB mouse with a Mac. For example, I currently have a three-button

Kensington wireless USB mouse connected to my MacBook Pro. In the past, I've used mice by Logitech and other companies. Finally, if you don't want to buy an optional mouse for your Mac, you can still access context menus. Instead of right-clicking, just press the CTRL key while clicking. This accomplishes the same thing as a right-click.

Myth: Macs can't run Windows programs. Now that Macs have Intel processors, they can run Windows as well as OS X. There are some great virtualization programs available, such as Parallels Desktop (\$79.99; www.parallels.com) and VMware Fusion (\$79.99; www.vmware.com), which let you run Windows in a virtual environment (so that you can run Windows programs alongside your Mac applications). Apple also offers Boot Camp, which is included in its latest version of OS X (OS X 10.5 Leopard). Boot Camp lets you boot into a Windows partition on your Mac. Unlike Parallels Desktop and VMware Fusion, Boot Camp lets you run Windows natively rather than through a virtual environment. With Boot Camp, I can now install and run my favorite Windows programs, such as the Windows-only genealogy software RootsMagic, on my Mac.

The myths above are only a few of the many you'll likely hear. I'm constantly amazed by the number of people who assume that I'm a student or an artist because I own a Mac. They are shocked to learn that I can share files with my PCs, run programs such as Microsoft Excel or Intuit Quicken on my Mac, and do "real work" on an Apple computer. In fact, I can't think of anything I can do on a PC that I can't also do on a Mac, proving that you can't believe everything you hear. ■



WEB TIPS

Enhance Your Time Online

Driving Directions . . . For The Subway

Problem: The last time I was visiting New York, I tried to use a popular map site to get directions. But I found that driving directions don't work well without a car. Why can't I get directions that include using the subway?

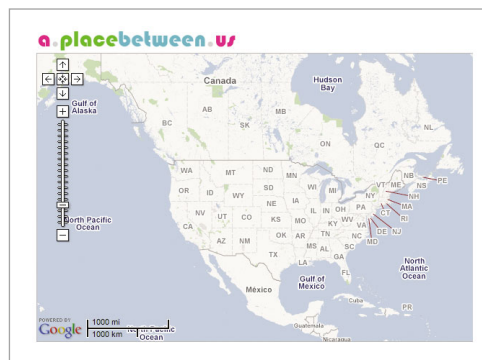
Solution: It's true, map sites can be frustrating in a big city when you don't have a car—do you really want to walk 2.4 miles down 5th Avenue? Give your dogs a rest and check out HopStop (www.hopstop.com). This site delivers door-to-door directions using the city's mass transit system. Enter a street corner and find the nearest train stop, and away you go. HopStop only works with New York City, Boston, Chicago, San Francisco, and Washington, D.C., with a few more locations in beta. If you plan on traveling to these cities,

bookmark this site on your Web-enabled mobile phone.

Keep Your Phone Number Private

Problem: I hate giving out my cell phone number for fear that I'll get flooded with unwanted calls.

Solution: Don't give out your phone number, give out a temporary number. That's not a typo, that's the Web site numbr.com (numbr.com), which provides free, auto-expiring phone numbers. Good for first dates and Craigslist transactions. When someone calls this number, he or she is prompted to record a short introduction that you can hear before accepting the call for further privacy. Right now there are only 30 area codes you can customize. Otherwise, you're stuck having your caller dialing up a 415 number . . . and



Finding a place for you and your friends to meet in the middle no longer needs to be a major headache.

that means long-distance charges could apply.

Go Ahead, Make My Bibliography

Problem: As a student working on long research papers, one of the most tedious things is assembling a thorough, properly formatted bibliography.

Solution: BibMe (www.bibme.org) won't actually write your list of cited works for you, but it will save a ton of formatting time. The Autofill mode will look up the details of a book, magazine, film, newspaper article, and more. Then it will put the results in either MLA, APA, Chicago, or Turabian style formats.

Lists & Sub Lists

Problem: I love lists, but I really need a site that supports nested lists or sub lists.

Solution: If you are focused on creating deep lists, try these sites. Listigator (listigator.com) is pretty straightforward, but its good looks and simple interface give it a little leg up.

It uses categories, which are essentially lists within a list. Toodledo (www.toodledo.com) seems a little more robust under the hood, with subfolders, goals, time estimates, and iPhone optimization. And Todoist (todoist.com) offers clean and efficient list-making, with hierarchies, a built-in calendar, and email integration.

Let's Meet Halfway

Problem: I want to get together with a friend who lives across town, but we can never decide on the perfect place to meet in between.

Solution: You need to find a.placebetween.us (a.placebetween.us). This Google Maps-powered site allows you to enter two or more addresses and the type of location you and your friends are in the mood for. Then a green flag pops up in the center of all the original locations, along with recommended places. Drag the flag to adjust the focal point closer to one place or another. ■



HopStop has subway-friendly directions for a number of large U.S. destination cities. Enter your location or simply click the map.

Online Pet Pampering



Here Kitty Kitty

www.here-kittykitty.com

We're all for pampering your pet, but we're not sure Fluffy is really the one who craves this shop's jewel-bedecked collars and tags. The site features crystal and rhinestone items, as well as some truly cute (and much tamer) fabric collars. The Web site's Beastie bands sport a variety of patterns, including Christmas trees, fish bones, chili peppers, and (of course) leopard spots. Here Kitty Kitty also sells items for small dogs, but if you hate the idea of buying dog collars from a Web site for cat owners, check out its sister site, LittleDogToo.com (www.littledogtoo.com).

I Can Has Cheezburger?

www.icanhascheezburger.com

When it comes to quirky-yet-entertaining-and-addicting Web sites, I Can Has Cheezburger? tops the list. This odd blog features user-submitted pictures of cats and other pets in cute or funny poses. Each picture includes a poorly spelled, grammatically challenged caption, as if it were written by the animal, supposedly. (Did we mention that the site is quirky?) You can vote for your favorite photos and even submit your own funny pictures. The Random link at the top of each

page provides newcomers with a great look at the site's huge picture database. Go ahead and smirk—you'll be clicking that Random button and laughing for a good 30 minutes.

Pet Friendly Travel

www.petfriendlytravel.com

Sure, you can leave Sparky at the pet hotel while you vacation in North Carolina, but you'll wish he was there to enjoy the beach and the sun. And, of course, Sparky will miss you too—between the walks, doggie snacks, and playtime with all the other new and exciting dogs at the pet hotel. Luckily, those of us who can't bear to part with our pets don't have to: There are plenty of pet-friendly hotels and campgrounds across the United States and Canada. The Pet Friendly Travel Web site helps travelers find these locations and even offers details on pet-friendly restaurants.

Pet-Tags.com

www.pet-tags.com

Call us crazy, but we love those pet tag vending machines that drill your pet's name into a shiny new ID tag while you watch. That said, even the vending machines aren't as fun as Pet-Tags.com's online tag maker. Once you select your pet's size, you choose a tag

from the site's array of tag shapes, sizes, colors, and materials. Thanks to a cartoon pet, you can see how each tag would look on your own pet's collar. The site lets you enter the information that will appear on the tag and then mails the tag to you. All tags are \$7.99.

Pets 911

www.pets911.com

Although Pets 911 gears much of its information to pet emergencies, we encourage would-be pet owners to check out the Before Adopting articles in the Cats and Dogs sections. (You'll see the section links at the top of the main page.) The articles help prospective pet owners determine whether they're ready for a pet and offer tips for choosing the right type of animal. Once your new pet is home, check in with Pets 911 again to find great healthcare information.

Purina

www.purina.com

If you want to learn more about your pet's health, Purina is a great place to start. The pet food maker's Web site boasts some information-packed articles about pet body language, poisonous plants, and teaching your child to care for your pets. The site offers separate sections for cats and dogs, as well as RSS (Really Simple Syndication) news feeds and an email newsletter. You can print the Web site's articles or email them to friends.

The Poop

www.thepoop.com

If you're a dog lover, The Poop, which bills itself as "The site where a dog can have its day," should be in your Internet browser's bookmark list. Pet owners-to-be can browse the site's dog adoption listings or search for local dog rescue groups. The site also offers Daily Breed Facts and polls to nonmembers, but you'll need to sign up for a free membership to make the most of the site. Members have access to the site's forums and receive coupons.

That's News To You

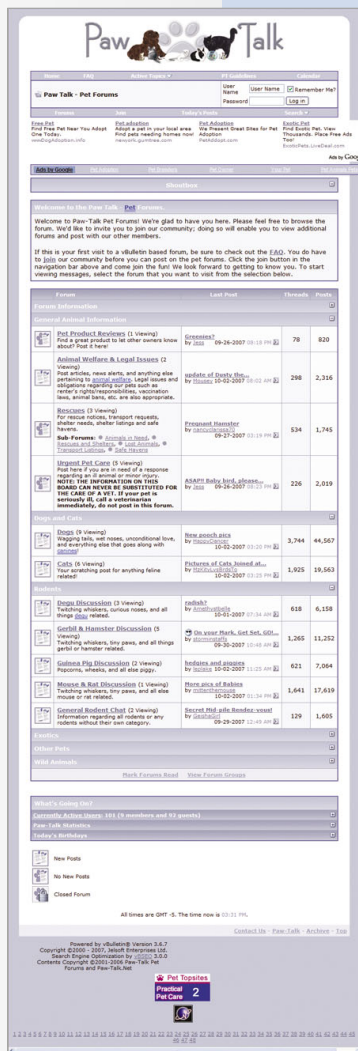
Finding the appropriate online group to match your interests can be a monumental task. So each month, we scour the Internet to bring you the friendliest forums and most interesting bloggers the Web has to offer. This month, we talk paws and claws with the members of Paw Talk.

Paw Talk

www.paw-talk.net

Whether you're planning to build a scratching post or want to find out what other dog owners are feeding their favorite canines, the members of Paw Talk are happy to answer your questions. Paw Talk's forum gallery includes individual rooms for cats, dogs, gerbils, guinea pigs, hedgehogs, and ferrets, among other animals. You'll also find forums here that discuss animal welfare and rescue issues.

You can browse the forums and read discussions without a membership, but you'll need to register (free) to post messages. Supporting memberships, which let you store more PMs (private messages) and take advantage of other special features, are available for \$20 per year.



Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month we feature highlights from our pickings. This month, we check out some pet-friendly programs.

Pet Health

www.pet-health.org

Planning a vacation without your pooch? Whether you plan to leave Sparky at a pet

hotel or with a neighbor, you'll want to give his temporary caretaker some basic information about your dog's health and care needs. To that end, Pet-Health.org's free Pet Health software lets you

keep track of your pet's medical, grooming, and emergency information in a single program. When you're ready to head out the door, you can print the pet's information pages directly from the software and then give the pages to the caretaker.

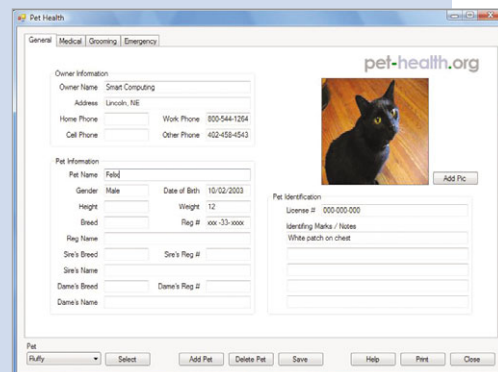
Although Pet Health isn't quite as robust as particularly detail-conscious pet owners may prefer (it doesn't have a diary feature that would let you enter notes about individual vet visits, for example), the program does a great job of organizing the information your pet's caretaker is most likely to need, such as the pet's vaccination dates, medical conditions, and your veterinarian's contact information.

Pet Puzzle

www.fda.gov/oc/opacom/kids/html/petpuzzle.htm

If you're hunting the Web for a game that will intrigue your grandchildren on their next visit, look no further than the U.S. Food And Drug Administration's free Pet Puzzle. The online puzzle features eight movable squares that, when the puzzle has been solved, display pets, a house, and the message "Provide A Safe Home For Your Pet."

You can access the puzzle in your Internet browser. If your browser doesn't have a Java plug-in, however, the tiles may not appear. The good news is that Sun's Java plug-in is free. Follow the link on the puzzle page to download and install the JRE (Java Runtime Environment) plug-in. Once it's installed, return to the Pet Puzzle. The puzzle will appear, and you'll find that you can move the puzzle tiles by clicking them. ■



Use Pet Health to keep track of your pet's most important medical and emergency contact information. The program lets you track multiple pets.



Search Engine Tips

Finding What You Want, When You Need It

Web search engines are wonderful Internet companions if you know how to use them properly. Among their many uses, they can help us find out-of-touch friends, tell us where a popular movie is playing, and resolve a heated argument about some arcane bit of trivia (hopefully in our favor). However, many search engines are so all-inclusive that they can often be a key source of frustration, as well.

In this article, we'll introduce you to some of the best search sites for specific needs and successful results. Our objective is not to give you a beginner's primer on searching but rather to introduce you to resources you may have overlooked. If you need general search tips, look to the Help pages of the various search engines or to The Spider's Apprentice (www.monash.com/spidap.html).

Ask For More

Most major search engines now offer an array of specialized search services, including the ability to search blogs, scholarly works, location-specific resources, and more. Often, these are listed under a More link on the main search interface. Google (www.google.com) has the largest number of alternate resources among the top search engines. However, that doesn't mean it's the best resource, because each has different attractions.

For example, Yahoo! is known for its Local search feature (local.yahoo.com). Microsoft's Live Search (www.live.com) offers a unique health site and resource



search engine, HealthVault Search (health.live.com). Google is a darling for inventors and forward-thinking types with its Google Patent Search (www.google.com/patents) and Google Labs (labs.google.com) search engines. Spend some time exploring them all.

Become More Literary

Top search engine Google is engaged in a quest to bring as many books as possible online. To do this, it is partnering with libraries, publishers, and authors to offer Google Book Search (books.google.com). This site's Advanced Book Search lets you search by title, author, publication date, and other criteria. You can also restrict your search to those books that offer a full view (the entire book online) or come only from library catalogs.

Microsoft's Live Search also offers a book search (books.live.com), but it lacks Google's advanced search interface. However, it has an interesting two-paneled results interface that lets you see the cover and other helpful information by mousing over a listing's main link.

Find What's Gone

Have you ever clicked a search result that described exactly what you seek, only to find the page is missing or not what was represented by the search results? Content comes and goes quickly on the Internet. What a **search spider** (a program that scans the Internet, fetching Web pages for a search engine to index) may have crawled last week can be gone today.

However, many search engines, including Google, Yahoo! (search.yahoo.com), and Live Search, offer cached content, which lets you view the page as it appeared the last time the spider visited. We're particularly fond of Google's cached search results, as they also highlight your search terms as they appear on the page. This is useful not only for finding erased content, but also for quickly identifying the reference you seek when a page contains a substantial amount of unrelated content.

Get Specific

If you are searching for very specific information from a broad category, you must tighten your parameters as much as possible. Using Boolean search strings works, but it can be complicated, and not all search engines treat Boolean search strings equally. To make things easier and to search using more criteria, head to an advanced search interface.

Your favorite search engine likely has an Advanced Search option, but two are really standouts in the search

engine world. The first is a lesser-known search engine, AlltheWeb (www.alltheweb.com), which is powered by Yahoo! Here, you can search by domain (include or exclude .gov, .org, microsoft.com, etc.), date, and specific file format (such as PDF [Portable Document Format] or HTML [Hypertext Markup Language], among other things. You can also increase the number of include/exclude filters beyond the interface's default. If your browser takes you to livesearch.alltheweb.com instead, select Options and Turn Off Livesearch, or you won't have access to the Advanced Search interface.

Google's advanced search is nearly as powerful, although it does not let you add filters and its date settings are not as flexible. However, it can search by

are a problem—consider a metasearch engine. These query multiple leading search engines to give you access to a greater range of results. They generally lack the advanced search interfaces of a single search engine, although they usually accept Boolean search strings.

Examples of metasearch engines are Dogpile (www.dogpile.com), Ixquick (www.ixquick.com), and Search.com (www.search.com). We're particularly impressed with Ixquick, because it rates results based on search engine consensus (how many search engines placed the result in their top 10). A five-star ranking means that five search engines gave the result a top-10 ranking.

Metasearch (www.metasearch.com) and Proteus Internet Search (www.thrall.org/proteus.html) take a different approach, instead letting you send your search to the engine of your choice. (Using Metasearch, you must perform a search before sending it elsewhere.) Of these two, we prefer Proteus because it offers an area of Boolean search characters beneath the search box that you can add to your search string with a click. It also has a search string evaluator (click the Eval link to the right

are particularly full in scope. It excludes commercial and educational/institutional content unless it is freely accessible and not fee-based and, in the case of commercial sites, not available elsewhere.

It focuses on English-language sites that contribute current, accurate, competently written information about major issues. It seeks to exclude content with questionable legal (copyright) status or whose developers/contributors may not have the credentials to write about the topic at hand. It began life as the Berkeley Public Library Index, so it is slightly weighted in favor of California, although it has expanded its parameters to the entire world. It also lacks any advanced criteria, although it subdivides its content into numerous categories.

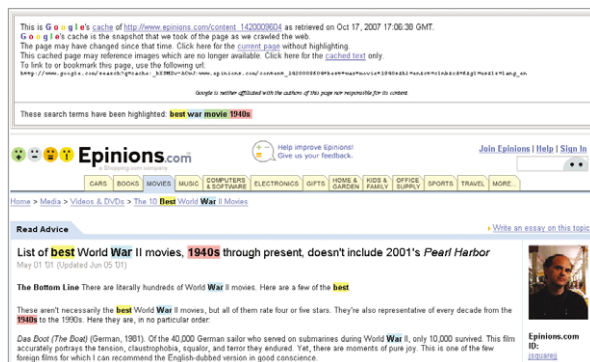
Easy Access

If you would like to have more than one search engine at your fingertips, some sites have toolbars or widgets you can install. Optionally, in Internet Explorer and Firefox, you can add search engine (or any other) sites to the Links toolbar (Bookmarks in Firefox). In Internet Explorer, right-click anywhere on a site and select Add To Favorites. Next, open the Favorites menu and drag the link to the Links toolbar. In Firefox, right-click the Bookmarks toolbar and select New Bookmark.

If necessary, you can delete some existing links or bookmarks (right-click them and select Delete) to make room for your new ones. If the toolbar isn't on, select Toolbars from the View menu and select it to enable it.

As you've probably seen in our examples, the best search engine is the one that meets your needs at the time, not necessarily the one that everyone uses. ■

BY JENNIFER FARWELL



Google's cached pages not only show content that may no longer be available online, but they also highlight your keywords for easy identification.

license (copyrighted or freely usable), occurrence (where on the page the term appears), and numerical range (what numbers appear on the page).

Search Once, Search Them All

When you query keywords at a particular search engine, you don't actually search the entire Web. Rather, you search the database of sites that the search engine indexes. If you want to ensure you're searching as many resources as possible—especially with unusual topics where too few returns

of the search box) that examines your string for efficiency.

Trust A Librarian

One of the most intriguing and potentially valuable search engines for reference work is the Librarians' Internet Index (www.lii.org). This search engine is exclusive rather than inclusive. Its mission is "to provide a well-organized point of access for reliable, trustworthy, librarian-selected Web sites." It maintains records for Web sites with important content that

DIY Web Sites

Think It, Learn It, Do It

The do-it-yourself mentality is one of the things that built this country, and it is most certainly still deeply embedded into the fabric of American sensibilities. FedEx was dreamed up by a college kid. Apple Computer started out as a pet project of Steve Wozniak and Steve Jobs that they birthed in Jobs' garage, and Google was founded in a dorm room by a couple of grad students from Stanford University. The

list of spunky and successful startups goes on and on.

Do-it-yourself projects (DIY for short) have been brewing in garages, basements, and college dorm rooms for years. It was inevitable that these ideas found their way onto Web sites dedicated to DIY projects of all types, and the sites feed the growing legions of people searching the Internet for answers on how to do everything from knitting to building a computer to home remodeling.

There is a bevy of interesting, wildly entertaining, and even mischievous Web sites out there that offer articles, instructions, and video of DIY projects. Have you ever wondered how to make your own solar-powered bicycle? Or wanted some creative ideas for entertaining kids at a party? Or tried to figure out how to fix your car without sending it to a repair shop? The answers are out there. We dug up some of the best DIY Web sites and learned a lot about each one—and we found them ourselves, with just a few simple instructions.

Lifehacker

www.lifehacker.com

We'll spare you the complete, and therefore lengthy, etymology of the term, but a "life hack" is essentially a way to cut through the pitfalls, roadblocks, and general inefficiencies that we all face on a daily basis to get things done quicker, easier, and with less agitation. Lifehacker is a gathering ground of tips, tricks, shortcuts, and clever solutions to make your life better. Whether it's working with technology, running errands, cleaning, or building something, this site can help you get your list done in record time.

Lifehacker is essentially a blog, but it is on a much larger scale. It is updated many times daily by a small team of editors, and it is supported by advertising, which you'll bump into as you scroll around. Lifehacker also includes posts that link to other DIY Web sites.

Finding what you want requires using the search engine near the top of Lifehacker's page. The links bar will then list similar topics that you may want to check out; you'll be shocked at the treasure troves of information you find.

For more at-hand information, you can subscribe to Lifehacker's newsfeed or buy the \$24.99 book, "Lifehacker: 88 Tech Tricks to Turbocharge Your Day."

Favorite Items

Top 10 Ways To Declutter Your Digital Life: These tech tips include uninstalling unused computer programs, emptying your email inbox, and strengthening your email filters.

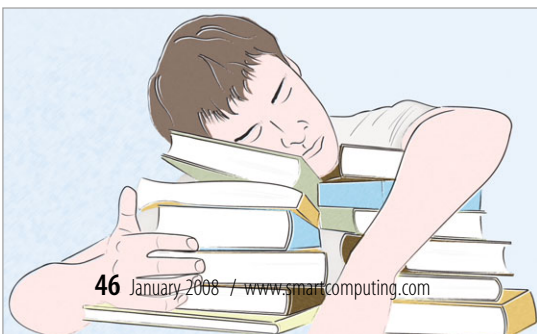
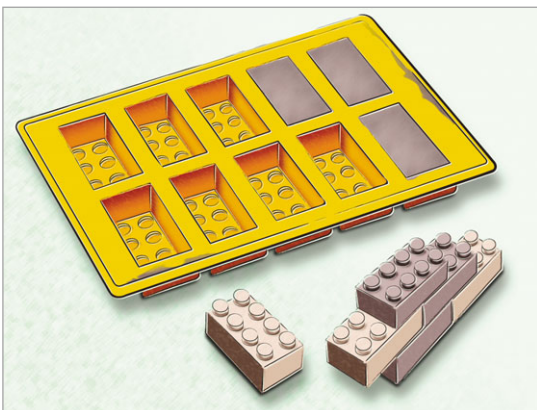
MacGyver Tips: If the 1980s television series was any indication, all of these tips will be useful and capable of being accomplished with ordinary objects, such as the stove made from two soda cans, some insulation, and a little lighter fluid.

Reboot Your Brain With A Caffeine Nap: This post offers tips on how to stay alert and productive with just a cup of coffee and a 15-minute catnap. Now, if your boss catches you asleep on the job, you can claim that you're just "increasing your productivity."

Instructables

www.instructables.com

Instructables are step-by-step instructions that are accompanied by pictures and sometimes even video on anything and everything, from how to trigger green traffic lights to how to clean your sinuses to how to make a crossbow out of a pencil. This site is definitely all about having a





Lifehacker is a collection of tips, tricks, shortcuts, and clever solutions to help make your life easier.

3-String Slide Guitar: It's mostly a block of wood with strings, but with a little precision and very basic wiring skills, you can make a fully functional electric slide guitar—then all you have to do is learn how to play it.

How To Draw: This series of pictorial lessons is perfect for any beginner who wants to learn basic pencil drawing. Get cracking and bring out your inner da Vinci.

wikiHow

www.wikihow.com

Like its cousin, Wikipedia, wikiHow is a collaborative effort. Its content is the product of submissions and edits by people all over the world. Anyone can submit articles, and anyone can edit them. For checks and balances, there are discussion boards that are moderated by Web site administrators.

Unlike many other DIY sites, wikiHow is not fancy or comical, but devoted to developing the highest-quality how-to lists with the widest range of topics possible to help people in their everyday lives. Whether learning a new skill; looking for tips on good, clean living; or just curiosity about a topic, wikiHow aims to deliver the necessary know-how.

A diversity of topics is certainly a strength of the site. At press time, the current top-featured articles included "Understand Chat Acronyms," "Help a Cat Give Birth," "Apply Bronzer," and "Make a Papasan Chair Cushion." Such eclecticism can only breed greater creativity and diversity.

Instructables offers step-by-step instructions accompanied by pictures and videos on anything and everything imaginable.

If you are searching for a specific how-to topic, you can enter it into the Web site's search bar or browse by subject. Chances are you'll find what you were looking for, but don't be surprised if you get distracted by a dozen other related topics that pique your interest.

Favorite Items

How To Rescue A Dog From The Shelter: Both noble and adorable, adopting a dog apparently requires only seven steps. The article gives advice on how to decide if you're ready for a dog, how to determine the temperament of the possible adoptee, and how much this good deed will cost you.

How To Buy A New Computer: This article gives pointers on buying a new computer, covering aspects such as what type of computer you need, work specifications, and issues affecting cost.

How To Amuse Yourself On A Plane: A long list of ideas for taking advantage of time during flights, this piece suggests writing, working sudoku puzzles, and working on a portable craft project, among other endeavors.

Make

www.makezine.com

Make is a multifaceted DIY site for the technologically curious. Funny gadgets, brilliant hacks for

good—and sometimes mischievous—time with all sorts of fun ideas. DIY projects from other sites can also be found here on occasion.

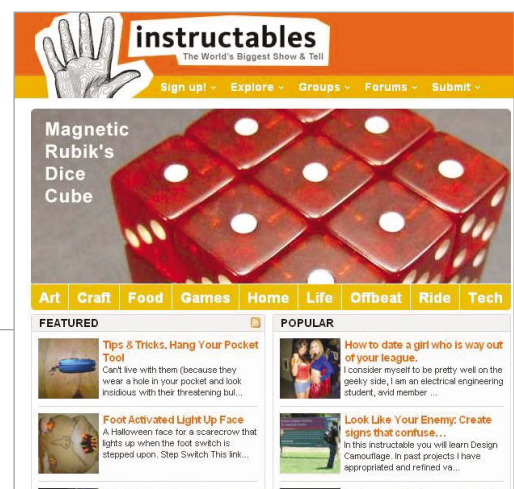
Some of the most interesting categories are Art, Life, Offbeat, and Ride, although that by no means is the complete list. The Offbeat section is aptly named, so consider this fair warning: Some of the content there definitely meanders off the usual path.

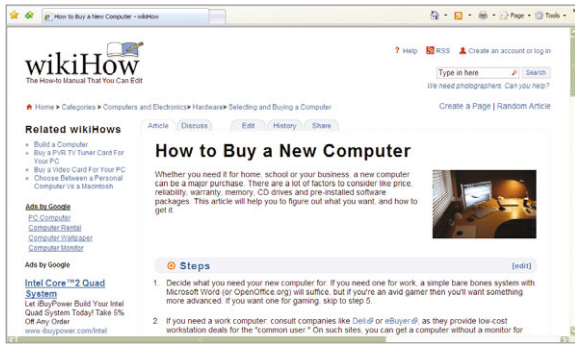
Members submit their ideas with visual aids and step-by-step instructions, and others can comment on their creations, ask questions, or make suggestions for improvements. It is free to sign up for an account; in addition to the aforementioned privileges, members can print instructions, post a question on the forum, message other members privately, and receive the weekly newsletter.

Instructables also features contests, such as Launch It!, wherein contestants offer their best projectile creation. There is a new contest theme every so often, sometimes reflecting the current holiday season. Contests such as these bring out some of the wildest, most interesting designs you can find on the site.

Favorite Items

Cart Bike: A bicycle with a shopping cart instead of a front tire, this DIY project is perfectly suited for those who want to make a hefty shopping trip without a car. Just be sure to wear a helmet.





You can follow wikiHow's eight-step tutorial for how to buy a computer.

creative—although you'll need to use frost-ing as cement.

Thirty-Minute Hovercraft: You can make a hovercraft out of cardboard, trash bags, duct tape, and a leaf

blower. Everybody in the neighborhood will be immediately jealous of you.

Make A Foxhole Radio: This podcast shows you how to make your own portable radio based on designs that American GIs in the field came up with in World War II. All you need are paperclips, a razor blade, a toilet paper tube, thumbtacks, a board, and some wire.

DIY:happy
www.diyhappy.com

More of a collection of other Web sites' content than a standalone DIY site, DIY:happy is well worth a visit. It links to a wide variety of DIY Web sites including Instructables, Metacafe (www.metacafe.com), and many others. These links can lead you to smaller, more specialized, but intensely interesting Web sites, where you can find all sorts of oddities that might strike your fancy. You will no doubt end up visiting several fascinating Web sites you otherwise never would have seen, such as clothing designer pages and small companies that make must-have gadgets.

The presentation of this site is fun, intuitive, and uncluttered, with posts that include a photo of the project in question along with a brief description and a link to the project's Web site. The hundreds of posts are broken down into categories that include Features, which are the most popular items of the day; Instructional, which gives step-by-step instructions for projects; Reference, for links to serious

instructional sites and books; and Ask DIY:happy, where you can post a question for any visitor concerning what you might be able to do with the interesting junk gadgets that clutter your closets. A Software section and Activism links also dot the site's landscape.

Somehow, DIY:happy manages to cover material you would find in craft, fashion, technology, or lifestyle magazines and makes it seem like it all belongs. This site is a profitable place to spend a rainy afternoon for the creative-minded.

Favorite Items

Latex Wounds/Lacerations: This project teaches you how to make theater-quality lacerations and wounds out of latex and other accessories. Use some fake blood, a little latex, a stipple brush, and a dollop of patience to make amazingly realistic fake wounds. Warning: The pictorial instructions are not for the faint of heart.

Bleach Printing: You can make interesting prints on fabrics (such as T-shirts and sweatshirts) by spraying a bleach mixture on it and then using stencils to add designs.

Official Seal Generator: All you have to do is enter the text, choose colors, and select borders and an emblem. The official-looking seal will be automatically generated and looks fantastic. You can keep the seal or, for a fee, have it printed on magnets, patches, or other miscellaneous media.

Next Time, Do It Yourself

There are untold numbers of project guides, how-tos, and every other kind of DIY instructions imaginable on the Internet. Above are a few of the best DIY sites around. The next time you have a project (or if you just want some creative ideas for future endeavors), your first step is to search through these Web sites. ■

BY SETH COLANER

devices, and serious design projects can be found here in abundance. The daily blog highlights interesting projects, products, and announcements for events and clubs. In addition, an oft-updated podcast offers video instructions and demonstrations for interesting projects. For example, a recent "Make" was on how to build a mellotron out of old Walkmans. There is, of course, the requisite Projects page where you can share your project ideas, as well as dig through archives of fun step-by-step projects.

The Forum/Community page contains a wealth of resources and includes festival announcements; an interactive Google map of Make-friendly people, places, and businesses; and a fantastic Tools-N-Tips section. Perhaps most interesting is the forum, where readers can submit and swap tips and tricks and brainstorm ideas.

One especially unique feature of this Web site is the online store. The Make Store carries fun items such as apparel and gag gifts, but you can also purchase books, tools, and kits that are necessary to complete the various projects featured on the site. Once you sign up for a free account, you can buy to your heart's content.

Favorite Items

How To Make Chocolate Legos: It's surprisingly easy to make chocolate Legos: All it requires is melted chocolate and an ice tray that Lego manufactures. You can either eat them or try and build something

Mr. M.'s Fabulous Festival Of Freebies

What better way to start off the New Year than with a potpourri of freebies? I herewith present for your reading, computing, and wallet-pleasing pleasure, my Top 10 downloadable freebies, in alphabetical order.

1. AVG Anti-virus Free Edition (free.grisoft.com/doc/2). This program is easy to install, and its Control Panel makes it a snap to configure, or you can use it in its default configuration. A paid version is available for \$38.95 for a two-year license, but the free version is excellent and more than adequate for most users.

2. Belarc Advisor (tinyurl.com/5w6o). Belarc assembles a detailed inventory of your system's hardware and software, including license and version information. Print it out and put it in a safe place. If disaster strikes, you'll have a comprehensive document that memorializes your system's vital statistics for repair, replacement, or insurance purposes.

3. Firefox (www.mozilla.com/firefox). Among my favorite features is this browser's renowned tabbed browsing interface. A fully integrated spell checker is particularly useful when participating in online message boards or composing Web-based mail, so you don't end up looking like a phool. More secure than Internet Explorer, Firefox is small, fast, and free, and that's a tough combination to beat.

4. Gmail (www.gmail.com). Each Gmail account has more than 2.8GB of storage, spam protection, a pop-up blocker, plus integrated instant messaging. Gmail automatically groups a message with its replies, making it easy to follow a conversation or "thread." Messages can be sent and read in more than 40 languages, which has been invaluable helping me keep in touch with Uncle Kapangpangan in Tagalog.

5. OpenOffice (www.openoffice.org). Once referred to as "the poor man's Office," OpenOffice has blossomed into a no-apologies-necessary suite that rivals Microsoft Office in every area, except price. It even works with most MS Office documents. If you're new to OO, don't miss the outstanding free tutorials at www.tutorialsforopenoffice.org.

6. PC Decrapifier (www.pcdcrapifier.com). This enchantingly named program is designed to remove most of the gratuitous software (crapware) that manufacturers install on new systems. The Decrapifier was created with Dell in mind, but it can be installed on any PC running Windows XP or Vista. After running the program, a list of installed software appears from which you can select the applications you would like to banish. Free for personal use; donations cheerfully accepted.

7. Size-O-Matic (www.pythoness.com). This handy utility permits you to view Web pages at any screen resolution without having to manually change any settings. Its toolbar-like presence displays a list of common screen resolutions ranging from 640 x 480 to 1,600 x 1,200. Select one and drag it into any window to reconfigure that window to the resolution desired. This can be particularly useful if you visit a Web page that slithers off the edge of your screen.

8. StartUp Monitor (www.mlin.net/startupmonitor.shtml). Its sole mission in life is to notify you when any program dares to attempt to register itself to run at system startup without your permission. When one is detected, a pop-up identifies and detains the would-be intruder pending your approval or rejection. This small (60Kb) program is sensational in its simplicity, easy to install, and virtually invisible. Startup Monitor works with all versions of Windows except 95.

The program is free, though donations are appreciated.

9. Thunderbird (www.mozilla.com/thunderbird). This full-featured email program, from the House of Mozilla, is a perfect companion to

Firefox and provides all the tools you'll need to manage your email efficiently and effectively. Its search feature is unparalleled: Search for any word or phrase in any message, in any mail folder.

10. YouSendIt (www.yousendit.com). If you have a large file (up to 1GB) to send but don't want to tie up your (or your recipient's) connection or overwhelm his inbox, YouSendIt is the perfect solution. Simply enter the recipient's email address, navigate to the file on your computer, then click the Send It button. Your recipient will receive an email link to the file stored on the YouSendIt server, where it will remain for seven days before being deleted. No password or registration is required and there is no software to install.

Now, it's your turn: E-me your favorite freebies and tell me what you like about them. In the June issue, I'll publish *your* Top 10 freebies. If your submission is selected, you'll receive a "Mr. Modem" mousepad, which is guaranteed to become your new favorite freebie. ■

BY MR. MODEM

Mr. Modem, (Richard Sherman) is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit www.MrModem.com.

Ladies & Gentlemen, *ADJUST YOUR ENGINES*

PC Tune-Ups: An Overview

Improving system performance is as much a marathon as a sprint. A fast new processor, a massive infusion of memory, and a vast new hard drive will all provide immediate boosts. However, keeping those components running at peak efficiency requires steady maintenance and regular adjustments. Our PC Tune-Ups feature package collects all the most important tips and tricks, organized in five basic categories, to make your system run better and keep it running long after most other machines have dropped out of the race.

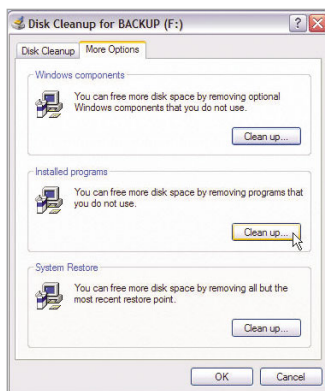
Storage. Big hard drives are nice, as are the ever-increasing options for high-capacity, high-speed removable storage (think DVD burners and thumb drives). But keeping ahead of expanding digital libraries and bloated file sizes requires more than simply adding new storage all the time. Wringing optimal performance out of hard drives and other devices, whether through diligent maintenance or vigilant security, will keep your machine running in top shape. We'll introduce you to the latest tricks for saving more and using less hard drive space, organizing and accessing that information more quickly, and avoiding catastrophic data loss when things go wrong.

Memory. In some ways, your computer's memory is much like your own. For starters, it can only handle so many things at a time. And like our carbon-based versions, a computer memory's performance deteriorates over time, in both capacity and reliability. The ability to acquire new hardware separates machine memory from our own, and we'll provide some advice on helping your computer make the upgrade.

We also have a few techniques that can improve your (computer) memory and help detect problems early.

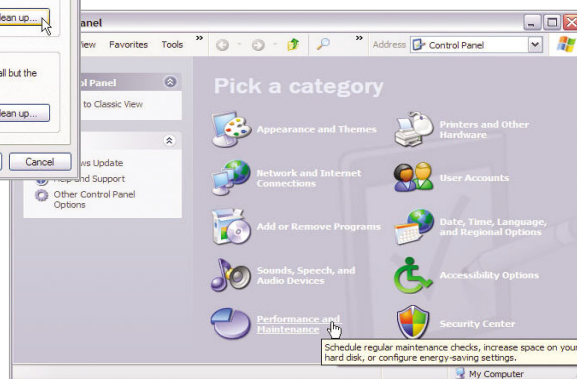
Operating system. An OS (operating system) is the glue holding everything together. The OS determines which commands require what components and in what order. In addition to making and policing these connections, the OS keeps track of all the configuration settings your hardware and software need in order to interact with each other. It naturally follows, then, that your system's overall performance is largely dependent on how well Windows runs. We'll show you a variety of tricks that improve OS performance, including system settings and configuration tweaks that will help you get the most out of Windows' basic options. We'll also introduce you to a few built-in utilities and Registry tips that can take OS optimization to new levels.

Applications and devices. System performance relies on more than just your core hardware and the OS. Every application you run and every device you use interacts with other applications and



Performing regular hard drive maintenance is just one of the tricks we'll offer to ensure optimal performance.

Tips for optimizing Windows' settings, using the Control Panel and other utilities, help make sure the OS (operating system) contributes to a strong and stable system.



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Reclaim Speed & Space

55 Optimize Your RAM

Tips For Improving System Memory

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Clean Out The Digital Clutter

62 Optimize Your Applications & Devices

**Keep Your Programs Running At
Peak Performance**

64 Optimize Your Physical Environment

Keep Your PC Clean & Cool

devices, weaving a complex web of performance all dragged down by the least reliable or slowest link. Every program and gadget is different, and we'll always defer to the manufacturer's instruction manual. However, we have some general guidance on tweaking your most frequently used programs and optimizing your peripherals. Strengthening every part of your system's performance equation helps every other part in the process.

Physical environment. Though we often overlook this fact, computing is about more than just the silicon slabs inside and around the case. Our physical environment impacts performance, as well. Our final section provides tips and tricks on making sure that your (and your computer's) surroundings aren't getting in the way of peak performance. After all, paying attention to often-overlooked details is one of the truest paths to success and happiness, or so we're told.

Regular tune-ups are rarely as exciting as a new machine or a complete overhaul, as you'll recall from your last oil change. But they're an essential part of keeping your system performing well and saving headaches and expense in the long run. With the tips and tricks we've prepared, you'll be able to keep your system running well until you're ready for that brand-new dream machine. ■

BY GREGORY ANDERSON





None of us likes to wait, especially when we've paid hundreds or thousands of dollars for a computer. And none of us enjoys running out of room for our data.

With the exception of an Internet connection, your computer spends most of its time waiting for a storage device to give it the data it needs. In this article, we'll tell you how to keep your hard drive from becoming a slowpoke. We'll also talk about ways to maximize your storage media's usable capacity.

Most of the following information deals with hard drives, but check the "Optical Drives" sidebar for info on DVD, CD, and blue laser drives. Also, see the "Solid Performance" sidebar, where we touch on new storage devices using solid-state flash memory.

Casey Jones, Watch Your Speed

For various reasons, IDE (Integrated Drive Electronics) devices can sometimes drop down to a terribly

slow PIO (Programmed Input/Output) mode instead of a fast DMA (direct memory access) mode. All of the following operations could take much longer than they have to if your interface speed has been artificially reduced. (You don't have to worry about this happening with SATA [Serial Advanced Technology Attachment] drives, as even the slowest interface speed [150MB per second] is fast enough for current drives.)

Press WIN (the Windows logo key) and the PAUSE key simultaneously to bring up System Properties or right-click My Computer (Computer in Windows Vista) and choose Properties. In Windows XP, click the Hardware tab and choose Device Manager. In Vista, click the Device Manager link on the left. Double-click IDE ATA/ATAPI Controllers.

In WinXP, double-click Primary IDE Channel. Under the Advanced Settings tab, make sure that the Transfer Mode and Current Transfer Mode fields for each drive have DMA

entries. Repeat the process with the Secondary IDE Channel.

In Vista, double-click ATA Channel 0. Under the Advanced Settings tab, if a drive is listed under Devices, the Enable DMA checkbox at the bottom should be selected. Go through each ATA Channel 0 and Channel 1 entry to check them all.

If a drive refuses to run in DMA mode, turn off the computer and try a different data cable. Also, check the drive's rear jumper settings and the PC's BIOS (Basic Input/Output System) Setup in case either is limiting the drive's interface speed. Make sure that a drive in Master mode is on the end connector of the cable and a Slave device is on the middle connector.

Elbow Room

If your hard drive starts to run out of space, it can actually slow down your system. (For information on **swap files** [also known as **paging files**], or areas of the hard drive used to supplement the RAM, turn to "Optimize Your RAM" on page 55.)

Windows assigns default percentages of hard drive space to the Recycle Bin and System Restore features. Unfortunately, 12% of a current hard drive is exorbitantly larger than 12% of a typical drive back when WinXP was released in 2001. Dial down these settings to more reasonable amounts. You'll still enjoy the protection the Recycle Bin and System Restore provide, but they won't waste as much space. However, note that shrinking either feature's storage space may delete older files and restore points.

In WinXP and Vista, right-click the Recycle Bin and select Properties. In WinXP, move the slider; in Vista, change the maximum size in megabytes to a smaller value. Click Apply.

To reduce System Restore's footprint in WinXP, simply press WIN-PAUSE, click the System Restore tab, move the slider, and click Apply.

Vista makes it harder to take control of System Restore. You must log in with your Administrator account and then click the Start button. Type **cmd** in the Start Search field and press ENTER. In the command window, type **vssadmin list shadowstorage** and press ENTER. Vista will list the Maximum Shadow Copy Storage Space (System Restore space) of each hard drive **partition** (section of the drive with its own drive letter). You can change this value to 2.5GB (or another value, such as 2 or 1.75) on the C: drive (or another partition, such as E:) by typing the following and pressing ENTER:

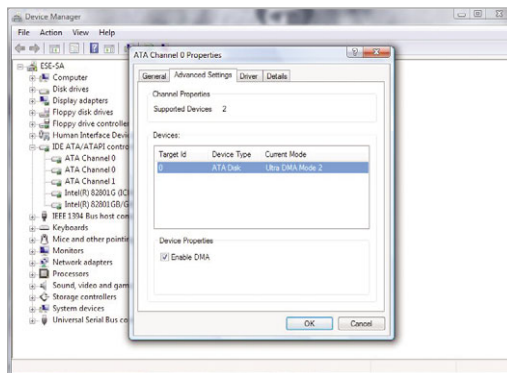
```
vssadmin resize shadowstorage
/on=c: /for=c: /maxsize=2.5GB
```

Cleanup

During normal operation, your computer accumulates “junk” files. Your Web browser may cache downloaded files. Windows and applications will generate temp (temporary) files they may not delete when no longer needed. Cleaning out junk files can help you reclaim storage space. It will also save your PC time during security scans and other operations because it won’t waste resources processing unnecessary files.

Your browser’s settings should let you delete cached, temporary Internet files. In Internet Explorer 7, for instance, click Tools and Internet Options. Under Browsing History, click Delete. Next to Temporary Internet Files, click Delete Files and Yes. You can also delete your browsing history, cookies, and other items if you wish.

To clean out junk files in WinXP or Vista, press WIN-E or right-click Start and choose Explore. Right-click a hard drive partition, such as Local Disk (C:), and select Properties. Click Disk Cleanup and then select the items you want to delete. Click OK when you’re done. Click Disk Cleanup again if you want to explore the More Options tab, which will let you



If your drives aren’t running in DMA (direct memory access) mode, they’ll crawl.

run another scan. This more in-depth scan may take hours, but it will try to wall off parts of the hard drive that can no longer store data. If a pop-up message says that the scan can’t proceed while Windows is running, click

the option to schedule a scan for the next bootup.

uninstall programs, delete System Restore Points, and more.

Error Scans

In the same Properties window, click the Tools tab. In the Error-Checking section, select Check Now. Check the Automatically Fix File System Errors box and click Start. Windows may or may not report its results to you. If it finds errors, however, select the Scan For And Attempt Recovery Of Bad Sectors option and

Defragging

Your computer is technically as fast as the day you bought it, but it may seem slower after a few months of use. The hard drive has likely become fragmented. It’s not broken, but rather scatterbrained.

During everyday use, a hard drive stores some chunks of data and deletes others. The chunks differ in size, so

OPTICAL DRIVES

The best way to keep your DVD, CD, BD (Blu-ray Disc), and/or HD DVD (high-definition DVD) drive running smoothly is to take care of its media. Always store discs in their cases; never toss them carelessly around.

To clean a dirty disc, use a mild window cleaning spray and a soft cloth. Wipe the nonlabel side of the disc from the center hole to the outer edge, as if you’re following the spokes of a wagon wheel. Never wipe a disc in a circular pattern, as the concentric scratches that result may cause skipping or data loss.

If certain brands or speeds of discs don’t work well in your optical drive, try other discs. Also, check the drive manufacturer’s site for a firmware update.

Finally, be careful when you add data to a partially full disc burned in the multisession format. If you write new files to it without enabling your burning software’s Continue Multisession setting, the previously burned data could become inaccessible.

Some programs may not have such a setting, however. “For Nero Express, always make sure you first insert the disc into the recorder before you launch (the program),” said Craig Campbell, Nero’s technical director. “This will allow Nero Express to first detect the previous session, and it will automatically use the ‘Continue Multisession’ option.”

Campbell also pointed out that Nero’s new version 8 includes RescueAgent, a utility that can recover data from “lost” sessions on a disc. ■

gaps form, as in the game Tetris. As contiguous blocks of unused sectors become smaller, the drive may break up large files, writing pieces of them here and there to make use of available space. Over time, this fragmentation of files slows down the drive's read and write performance, as it may have to look in many locations on its spinning disks to piece together a complete file.

Defragmenting software reorders the data on your drive so that most files will be stored in a single, contiguous piece. You can access Windows' built-in defragmenter in a hard drive partition's Properties window (via the Tools tab). Vista makes it much easier than WinXP to schedule automatic defragmenting sessions, but unfortunately, both OSes (operating systems) will bog down your PC during a defrag.

Third-party software such as Diskeeper (\$29.95 and up; www.diskeeper.com) and Raxco PerfectDisk (\$29.95 and up; www.raxco.com) automatically keep your drive running as swimmingly as it can. They've become adept at defragmenting only when your computer isn't working hard, so you don't have to stop using the PC during a defrag. You'll notice your hard drive whirring or its LED (light-emitting diode) blinking at odd times, of course, and you might need to wait a few minutes to delete or rename a folder, but that's about it. And over time, smart defragmenters such as Diskeeper and PerfectDisk can move the applications and data you access most often to faster parts of the hard drive.

Partitioning

Many users prefer to partition their hard drives into separate drive letters,

SOLID PERFORMANCE

Memory cards, USB flash memory drives, and SSDs (solid-state drives) all store data in silicon. Defragmentation isn't an issue because there's no delay as a drive physically spins around to each piece of data. However, if your solid-state device starts to generate error messages, try right-clicking its icon in My Computer (Computer in Windows Vista) and choosing Format to reformat it.

Hybrid drives combine flash memory with hard drives to extend battery life and boost performance to an extent, at least in Vista. An example is Seagate's Momentus 5400 PSD (\$190 for 160GB; www.seagate.com), available in Sony's VAIO SZ650 laptop (\$1,949.99; www.sonymstyle.com). Seagate recommends updating your computer's BIOS (Basic Input/Output System) and *all* device drivers, as older versions may not let a hybrid drive speed up everything it's designed to.

Also, make sure that your computer is taking advantage of the hybrid drive's power-saving features. In Vista, click Start, Control Panel, and Power Options. Under the selected Power Plan, click Change Plan Settings and Change Advanced Power Settings. Click the plus (+) signs next to Hard Disk and Windows Hybrid Hard Disk Power Savings Mode. Set the On Battery and Plugged In settings to Enabled and then click Apply. Other than these considerations, you should optimize your hybrid as a normal hard drive (delete junk files, check for errors, and defragment it). ■

such as C:, E:, F:, and so on. The idea is to install Windows on the C: partition and applications on E: and save personal data on F:. This arrangement

makes it much less disruptive when you have to reinstall or repair Windows, among other benefits. Most applications default to a C: installation, so remember to change the drive letter as you run each program's installation routine.

This topic merits an article unto itself, but we'll mention your main options. Windows XP and Vista let you create

partitions of various size as you install the OS. Later, you can delete, resize, create, and format partitions within

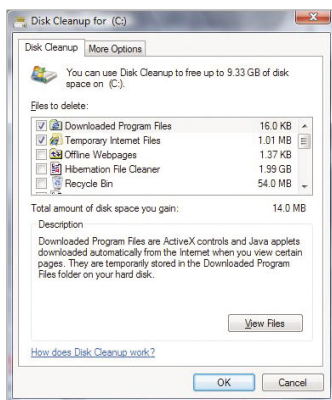
Windows (click Start, Control Panel, Administrative Tools, Computer Management, and Disk Management). However, the big gotcha is that Windows can only destructively partition a drive, meaning that Disk Management will erase all data on the affected partitions.

To partition your drive without losing any data (although you should keep your backups current because there's always some risk), use third-party software such as Norton PartitionMagic (\$69.95; www.symantec.com) or Paragon Partition Manager (\$49.95 and up; www.partition-manager.com).

Every Little Bit Helps

Optimized storage makes your PC more efficient. That means your computing sessions can be more enjoyable and productive. ■

BY MARTY SEMS



Windows Vista's Disk Cleanup opens much faster and offers more options than Windows XP's.

OPTIMIZE YOUR RAM

Tips For Improving System Memory

A computer can have the fastest processor, best hard drive, and ultimate video card and still regularly slow to a crawl. Not because of viruses and not because of spyware, but because it doesn't have the right kind or amount of memory.

When tweaking a system for performance, memory is the first thing to address. It is easy to install (you don't even need tools), inexpensive compared to other components, and packs a tremendous performance boost.

How Much Is Enough?

RAM is measured in gigabytes, where 1GB equals 1,024MB. More memory is generally better, but the law of diminishing returns for most home users really kicks in above the 2GB mark for both Windows XP and Windows Vista systems. Because most consumer versions of Windows are 32-bit operating systems, they can address (or "see") a maximum of 4GB of RAM, but 2GB of RAM is ideal from a price and performance standpoint.

Before buying more RAM, it is important to check the documentation that came with the computer to find the maximum amount of RAM the motherboard supports, as sometimes that figure is lower than what Windows can address.

Types Of RAM

If you have an older system, it may have a type of memory called RDRAM (Rambus dynamic RAM), which is no longer used. Most PCs manufactured in the past several years use SDRAM (synchronous dynamic RAM) or DDR SDRAM (double-data-rate SDRAM), which we'll focus on in this article because it is commonly available, affordable, and easy to install.

Check the computer's manual to find out the fastest type of memory the

motherboard supports. This is generally written as a memory type and maximum speed, such as DDR2-800, where DDR2 tells you it's second-generation DDR SDRAM memory and 800 tells you the maximum speed in megahertz. DDR SDRAM speeds are often listed using marketing terms, such as PC2-4200, which translates to DDR2-533. Use the "RAM Conversion" sidebar to translate the marketing name to the real speed of the RAM, if necessary. Always use the fastest megahertz rating supported if it fits within your budget, but remember that a motherboard that supports DDR2-800 can still use slower sticks such as DDR2-400 if you're willing to live with the performance hit.

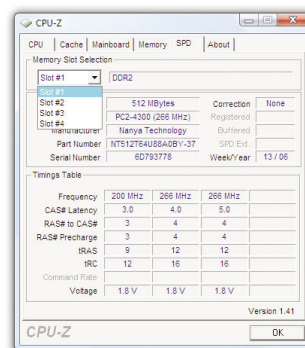
You'll likely see several other stats listed when shopping for RAM, such as ECC (Error-Correcting Code), Buffered, Unbuffered, and Registered. The computer's manual will tell you the exact technologies that are supported or not supported.

Singles Or Pairs?

One final thing to check is whether the motherboard supports dual-channel memory technology, as those types of computers run much faster when memory is installed in matched pairs instead of as a single stick. For example, if you want to put 2GB of memory in a dual-channel system, you're much better off purchasing two 1GB sticks (or even four 512MB sticks, if the motherboard has four memory slots) rather than buying a single 2GB stick.

Check the computer's manual to see if you can take advantage of dual-channel memory. If so, make sure any memory sticks

you use are of exactly the same type and from the same manufacturer. Many manufacturers sell matched



CPU-Z can tell you everything about each stick of memory installed on the motherboard.

RAM CONVERSION

Need to figure out the difference between a RAM stick's advertised name and the actual specification used in your computer's manual? Just look it up on this handy chart. (Note that the numbers following SDRAM and RDRAM RIMM names always refer to the speed, so no translation from marketing speak is necessary.)

DDR SDRAM

PC1600 = DDR-200 (200MHz)
PC2100 = DDR-266 (266MHz)
PC2700 = DDR-333 (333MHz)
PC3200 = DDR-400 (400MHz)

DDR2 SDRAM

PC2-3200 = DDR2-400 (400MHz)
PC2-4200 = DDR2-533 (533MHz)
PC2-5300 = DDR2-667 (667MHz)
PC2-6400 = DDR2-800 (800MHz)
PC2-8500 = DDR2-1066 (1,066MHz)

DDR3 SDRAM

PC3-6400 = DDR3-800 (800MHz)
PC3-8500 = DDR3-1066 (1,066MHz)
PC3-10600 = DDR3-1333 (1,333MHz)
PC3-12800 = DDR3-1600 (1,600MHz)

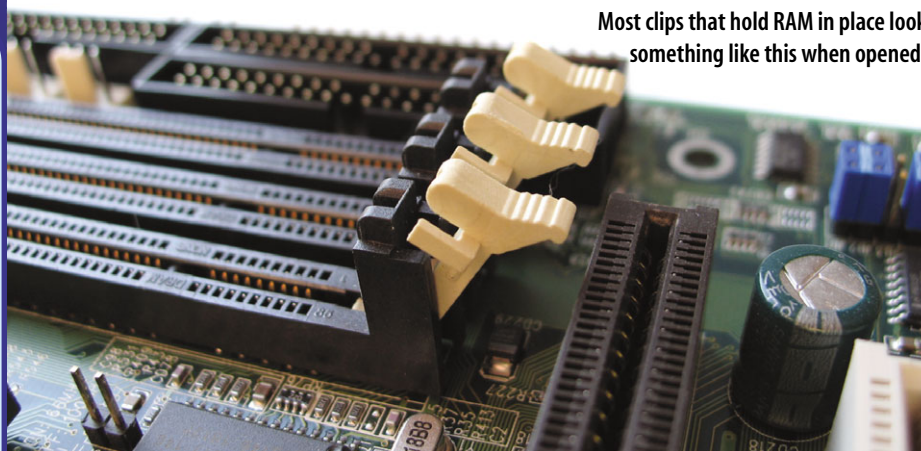
pairs in kit form, so be on the lookout for that option.

This is a lot to consider, but bear in mind that most sites that sell memory, such as Crucial (www.crucial.com), have automatic memory tools that scan your computer to find a perfect match, eliminating the guesswork.

Buying RAM

The first step when buying new RAM is to check the type and amount of RAM already installed to see if an upgrade is even necessary. In Windows XP, right-click My Computer, click Properties, and look in the Computer section of the General tab. In Vista, click the Start button, right-click Computer, click

TIME FOR A PC TUNE-UP



Most clips that hold RAM in place look something like this when opened.

Properties, and look at the figure next to the Memory (RAM) entry to see how much is installed.

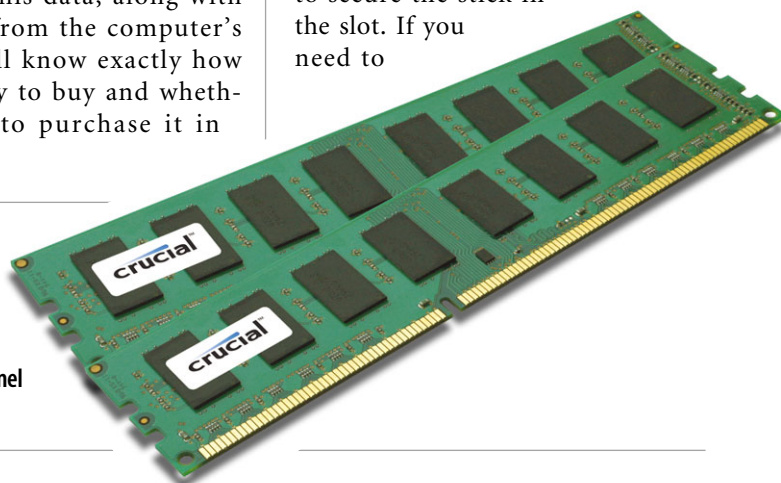
Getting more detailed information about RAM takes a special tool, such as CPU-Z (free; www.cpuid.com). Download it, double-click its ZIP folder, and double-click Cpus.exe. The Memory tab shows basic information about the installed RAM, while the SPD tab contains a drop-down menu with entries for each RAM slot on the motherboard. Selecting a slot tells you precisely what type and brand of memory stick is installed there. Instead of writing down this information, click the About tab, click the HTML Dump button, select a folder where you want to store the file, and click Save. Now, double-click the file you just created. It opens in your Web browser, where you can view everything you need to know about your RAM and make a printout. Armed with this data, along with information from the computer's manual, you'll know exactly how much memory to buy and whether you need to purchase it in matched pairs.

Installing RAM

Adding and removing memory sticks is simple and safe provided you follow a few basic rules. The most important thing is to discharge all static electricity from your body before handling the memory sticks. A static discharge is sometimes enough to fry delicate components on the stick, rendering it useless. Touch a grounded object before handling the memory stick, and remember that the computer's case is not grounded if you unplugged it to perform this installation. Always handle memory using its edges and try not to touch the memory modules on the sides or the metal contacts at the bottom of the stick.

Most computers have either two memory slots or four SDRAM memory slots that are grouped into pairs. SDRAM slots have clips on either end that are opened to eject an installed memory stick or snapped shut to secure the stick in the slot. If you need to

Buying memory in matched pairs is best if the computer supports dual-channel technology.



remove an existing stick, press down on each clip until they are completely opened and then pull straight up on the memory stick. To add a stick, make sure each clip is completely open, line the stick up in the slot with the metal contacts facing down toward the motherboard, and press straight down using your thumbs until the clips snap into place. Memory sticks are keyed so that they only fit into a slot when oriented in the right direction, so if you put pressure on the top and nothing happens, flip the memory stick end-for-end and try again. You'll know the stick is seated properly when both clips are completely closed and locked into the indentations keyed into the sides of each stick, securing it in place.

In most cases, the RAM you just installed should be immediately recognized, configured, and accessible as soon as Windows boots. If it isn't, be sure to consult the computer's manual to see if a BIOS (Basic Input/Output System) adjustment is necessary. Also, use CPU-Z to make sure the amount of RAM is properly reflected, all the chips are running at

their rated speeds, and dual-channel memory is being implemented if the motherboard supports it. Beyond that, enjoy the benefits of one of the

easiest and least expensive computer upgrades money can buy. ■

BY TRACY BAKER

ARE YOU READY FOR READYBOOST?

As described in the "Virtual Memory: When RAM Isn't RAM" sidebar, paging files are very nice, but putting them on the hard drive involves some compromises. Windows Vista incorporates ReadyBoost technology that lets you use a flash memory drive connected to the computer's USB 2.0 port as an additional page file area. ReadyBoost differs from a standard page file in that it is more efficient than the hard drive for caching small files that are frequently accessed, and it is most effective on systems that have 1GB RAM or less.

ReadyBoost works best with very fast flash memory drives, and while some of these devices are labeled as ReadyBoost-compatible, in reality, there are some unlabeled drives that work just as well. Use the ReadyBoost Compatibility Chart maintained by Grant Gibson (www.grantgibson.co.uk/misc/readyboost) to find a flash memory drive that is known to work with the technology.

Insert the drive in an empty USB 2.0 slot (older PCs may only have USB 1.1 slots, so double-check the manual) and wait for the AutoPlay menu to pop up. Click Speed Up My System, select the ReadyBoost tab, and click the Use This Device radio button. Use the slider to allocate storage on the drive to ReadyBoost. Click Apply and ReadyBoost is activated. ■

VIRTUAL MEMORY: WHEN RAM ISN'T RAM

Once you have the proper amount and type of memory installed, there are still a few things you can do to improve its performance, and making sure the Windows page files are properly configured is the most important of these tweaks. A **page file**—sometimes called a memory cache or virtual memory—is a portion of the hard drive that is used as a temporary RAM area when the memory sticks are full. Ideally, the page file would never have to be accessed because hard drives are thousands of times slower than memory sticks, so storing and retrieving data from there instead of the RAM banks slows the computer to a crawl. In reality, however, page files are used extensively, especially by photo- and video-editing programs where the size of the file

being manipulated routinely exceeds the amount of RAM installed in the machine.

In the past, it was best to adjust the page file manually for best performance, but if you have an up-to-date copy of Windows XP or any version of Windows Vista, you are better off letting Windows actively manage the page file. To check the settings in WinXP, right-click My Computer, click Properties, select the Advanced tab, and click the Settings button in the Performance box. Select the Advanced tab, click Change in the Virtual Memory box, and make sure the System Managed Size radio button is selected.

In Vista, click the Start button, right-click Computer, and click Properties. Click Advanced System Settings, select the Advanced tab, and click the

Settings button in the Performance box. Select the Advanced tab, click Change, and make sure the Automatically Manage Paging File Size For All Drives checkbox is selected.

If your computer has two hard drives installed, you can boost overall system performance by setting up page files on both drives. This lets one page file be used while the other drive is being accessed and vice versa, so that the hard drive never has to try to do two things at the same time. This is done automatically in Vista if you let Windows manage the page file, and to do it in WinXP, repeat the above steps but select the second drive in the Drive box before you click the System Managed Size radio button. ■

OPTIMIZE YOUR OPERATING SYSTEM

Clean Out The Digital Clutter

Remember the day you bought your computer? It was shiny, new, and fast. It booted quickly, opened windows at the speed of light, and handled multiple open programs with ease. Its fans were quiet, too, and the DVD drive didn't make a screeching noise whenever it opened. Yes, it was quite a machine back then.

Sadly, "back then" probably wasn't very long ago. "In my research, I have concluded that the optimal life cycle for desktops is three years; the optimal life cycle for laptops is two to three years," says Bruce Michelson, an HP spokesperson and expert on computer life cycles.

Now, your PC drags under the weight of the programs and files that clutter its hard drive, and its software brain, the OS (operating system), can't process information as easily as it used to. Windows spends seconds (seconds!) opening the My Computer window, and you can almost hear it groan when you start that ram-bunctious, memory-hungry whipper-snapper, iTunes.

Your PC isn't young anymore, and neither is the OS, but it isn't ready for the great big recycling bin in the sky just yet. With a little work, your OS can shed some of the digital fat that weighs it down. We'll show you how to turn back the clock so you can enjoy a faster machine again.

Grab A Digital Broom

Over time, your operating system collects files that it doesn't need anymore. Windows XP and Windows Vista both include a Disk Cleanup tool that sweeps out these virtual dust bunnies. To start the Disk Cleanup tool in WinXP, click Start, All Programs, Accessories, System Tools, and Disk Cleanup. In Vista, click Start

and then type **disk cleanup** in the Start Search bar. Click Disk Cleanup.

Once you start the Disk Cleanup tool and select the hard drive you'd like to clean, the tool scans your drive and displays a list of the types of files it wants to delete. Each listing displays the amount of space that file type is using; in many cases, the item doesn't take up much space, but in others, you'll be surprised to see that so much of your hard drive is dedicated to useless junk.

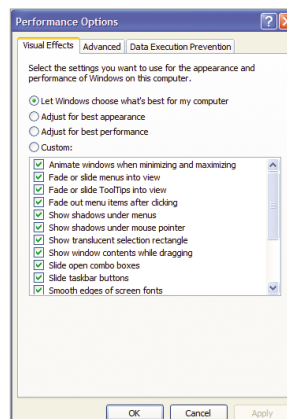
Temporary Internet Files will likely account for much of the space you can clear out. Your browser sometimes downloads Web pages so it can bring them back up quickly the next time you try to visit certain Web sites. Those files may be useful if you have a very slow dial-up connection, but otherwise they're just a waste of space. Don't worry if you spot some file types that you don't recognize—you can click any file type on the list to see an explanation of the file's purpose. Select the files you want to remove and then click OK to delete them.

Clean Up The Startup

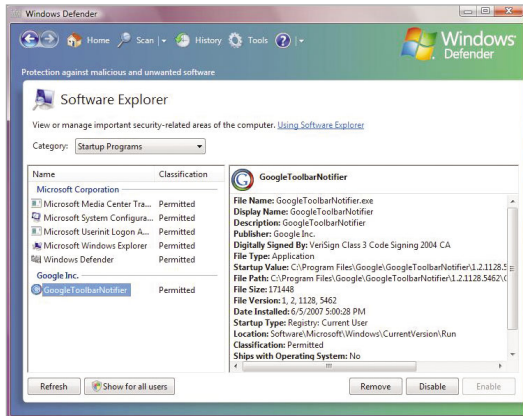
Some programs are configured to launch when Windows starts. That's a handy feature if the program is one that you run all the time, for example, your IM (instant messaging) program. But if you don't use the program regularly, it's unnecessarily draining your PC's resources (particularly the PC's memory) by running in the background.

You can speed up the startup process by configuring Windows to ignore some of the

unwanted programs. You can start them anytime after Windows starts, of course, but they won't be eating up



The Performance Options window lets you disable certain interface features so your PC's system resources can concentrate on more important processes.



Sick of watching programs open when you start Windows? Disable their Startup capabilities and then open those programs again when you're ready.

your system resources until you're ready to use them.

In WinXP, click Start, Run, and then type `msconfig` in the Open field. Press the ENTER key. Once you've opened the System Configuration

Utility, click the Startup tab. This tab lists the programs that automatically start when Windows starts. Browse the list and deselect the checkboxes next to any programs that you want to prevent from running at startup. Click the OK button. You'll need to restart your computer for the changes to take effect.

In Vista, click Start, Control Panel, and then click Security. Click Windows Defender and then click Tools at the top of the window that appears. Next, click Software Explorer. The left column in this window lists the applications that can load when Windows starts up. It also indicates whether the program is Permitted, which

means it will run when Windows starts up, or Disabled, which means Windows will block the program during startup.

If you want to know more about a program before you disable it, select it from the list by clicking it. The right side of the window displays the program's full name, as well as its location on your computer, the name of the program's publisher, and a brief description of the program.

Blocking a program is as simple as clicking the program's name on the left side of the window and then clicking the Disable button. This feature disables the program only during startup; you can start the program anytime by selecting it from Vista's All Programs menu. If you're certain that you will never want the program to open during startup, click

CLEAN THE REGISTRY

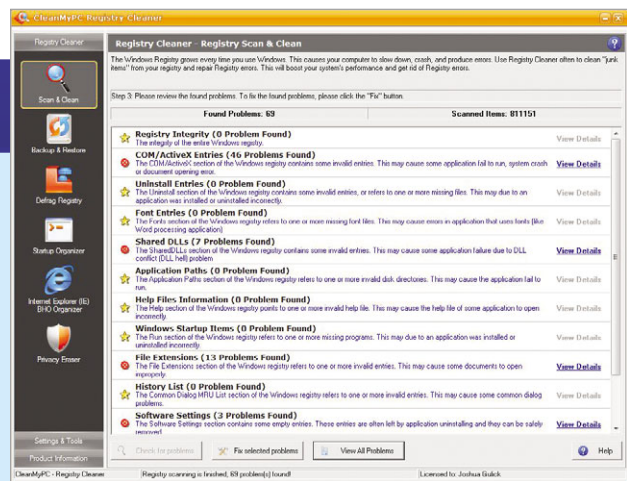
The Windows Registry is a database that houses information about the operating system's configuration. Windows updates the Registry's configuration entries whenever you install or uninstall new hardware or software or make changes to Windows settings. Over time, the Registry accumulates corrupt or obsolete information. These bad Registry entries weigh down your PC's performance by slowing the PC or even crashing it.

So why shouldn't you open up the Registry and clean out the bad entries? You can, of course. Windows includes a Registry Editor for such a purpose. However, you can easily damage the Registry by accidentally removing or changing important entries. Because the Registry is so critical to Windows' operation, a damaged Registry may destroy your copy of Windows permanently.

Thus, we recommend that you use a third-party Registry cleaner application,

which can automatically root out the bad entries and offer some protection against accidental Registry damage. CleanMyPC Registry Cleaner (\$29.95; www.registry-cleaner.net), for example, creates a backup of your Registry in case the original sustains damage during the cleaning procedure.

After backing up your Registry, the CleanMyPC Registry Cleaner scans the Registry and lists problems by category. The software provides information about each bad Registry entry and explains why you can remove it. If you spot entries that you're nervous about removing, you can deselect them so



CleanMyPC Registry Cleaner takes a virtual broom to the Registry. Old or corrupt Registry entries can wreak havoc on Windows' well-being.

that the software leaves them alone. Once you've protected any files you want to keep, CleanMyPC Registry Cleaner removes the bad entries.

Be forewarned that accessing the Registry, whether manually or with software, carries some risk for your OS (operating system). Back up all of your PC's important data to removable media or another PC before you attempt to clean the Registry. ■

the Remove button instead of the Disable button.

Adjust Performance Options

Both WinXP and Vista have a Performance Options menu that helps you shake your PC free of its sluggish behavior. You can boost your PC's performance by disabling some of the appearance settings.

To access the menu in WinXP, click Start, open the Control Panel, and then double-click System. When the System Properties window appears, click the Advanced tab and then click the Settings button in the Performance section. Click the Visual Effects tab when the Performance Options window appears. In Vista, open the Control Panel and then click System And Maintenance. Next, click Performance Information And Tools. This window displays information about your PC's hardware, including performance ratings for individual components. It also features a Tasks pane that includes an Adjust Visual Effects link. Click this link.

By default, Windows selects the Let Windows Choose What's Best For My Computer radio button. You can boost your computer's overall performance by clicking the Adjust For Best Performance radio button, but this is an extreme step, as it turns off many of the UI (user interface) features that you may regularly use, such as the Common Tasks pane that appears on the left side of most windows. If you want the best of both appearance and performance worlds, click the Custom radio button and then use the checkboxes to select your desired settings. Click the Apply button to see your changes right away.

Boost Your PC

Memory plays a huge role in PC performance, particularly when the computer boots and when it runs multiple programs simultaneously. Many computer motherboards have

DUMP THE MALWARE

Nothing slows down your computer as thoroughly as malicious software (often referred to as **malware**), such as adware, spyware, and viruses. Chances are you already have virus software, but if you've never scanned your computer for **adware** (software that pops ads onto your screen) and **spyware** (software that quietly monitors your activities and sends personal information back to the software's creator), it's time to get a scanner. Aside from breaching your privacy, these programs hog your PC's resources, slowing it down and even (in extreme cases) crippling your operating system.

Many software publishers now offer complete security packages that protect your PC against adware, spyware, and viruses simultaneously. If you don't have such a package, check out PCLive Security (www.pclive.com). The free, downloadable security software regularly scans your PC and removes malicious software. It also blocks pop-up windows and manages the Windows Update process, automatically downloading and installing critical Windows updates. PCLive bolsters its software with a subscription service that provides technical support for security-related issues.

CyberDefender Early Detection Center (\$29.99; www.cyberdefender.com) is another easy-to-use security suite. The software has an antivirus scanner that protects your computer from any viruses that find their way to your computer, including email viruses. Other safety features include a spyware scanner and spam blocker, as well as a toolbar that automatically installs into your Internet browser to protect you from phishing sites, which are fraudulent Web sites that often mimic legitimate sites. CyberDefender's main window lists each of its major features and includes a single button that activates the feature or starts its scanner. We like the spyware scanner in particular, as it provides clear descriptions of the spyware it finds. ■



Security suites, such as PCLive Security, keep your PC free of spyware, viruses, and other malicious software that can gum up the operating system.

extra memory slots that let you add memory, but Vista users have another performance-boosting option: Windows ReadyBoost.

ReadyBoost uses flash media, such as a USB flash drive or an SD (Secure Digital) card, to give your computer some extra memory when your PC tackles memory-hungry tasks. To learn more about Windows ReadyBoost,

refer to the "Are You Ready For ReadyBoost?" sidebar on page 57.

(Almost) As Good As New

Although these OS cleanup methods should free your PC of some of its clutter and speed up its overall performance, it probably won't perform quite as well as it did when it was brand

new. In fact, were you to wipe the hard drive clean and completely reinstall the OS, your PC still couldn't offer the performance it once provided.

The reason your PC can't perform as it once did is because it isn't running the same software as it once did. "With technology improving so rapidly, we find that software manufacturers soon forget about the old hardware and begin writing programs that need the faster hardware," says Jon Bach, president of Puget Custom Computers. "If you want to use that software, then you have to keep up and buy the new hardware. So if you

are happy using the programs you are today, your computer will not go obsolete. It is when you need to use new programs, and often you don't have a choice, that you find yourself needing a newer and faster computer."

Compare the programs you now use consistently to the programs that you ran three years ago. Did you run antivirus, antispyware, and firewall software back then? (You do run these critical security applications now, don't you?) What about iTunes or IM applications? Chances are, you've installed several new programs or updated versions of old programs over

the past few years. That new software expects your PC to have new hardware components, such as a new processor and memory. Although you refreshed your OS, your old hardware probably hasn't changed, and it may have trouble keeping up with new software.

The good news is that you can refresh some of your most important hardware (especially the memory) easily. If your optimized OS still drags, check out "Optimize Your RAM" on page 55 to learn more about bulking up your PC's hardware muscles. ■

BY JOSHUA GULICK

PUT ON YOUR DIGITAL TOOL BELT

You don't have to be a computer wiz to use Windows' built-in utilities, but why bother mucking around in the bowels of your operating system when you can enlist the help of a pro? That's the thought behind utility software suites, which feature tons of tools geared toward keeping your PC in top condition. Utility suites generally let you manage all system cleanup tasks from a single interface, which means you won't need to poke around in the Windows Control Panel or try to remember how you got rid of those temporary Internet files a few months ago.

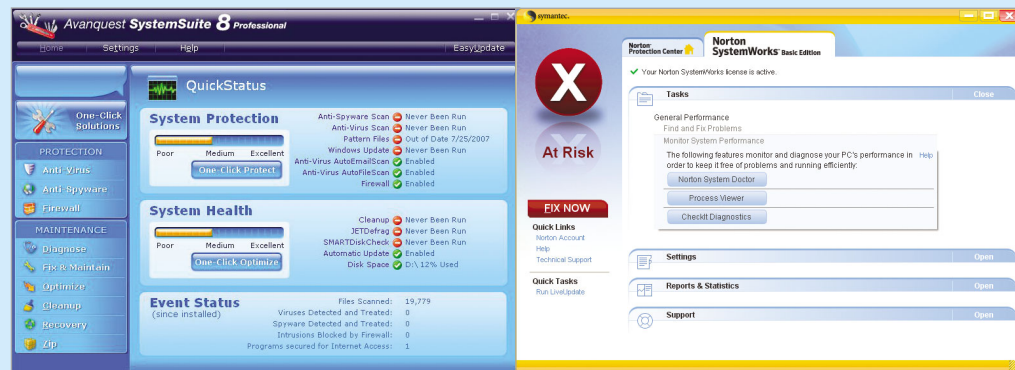
What's more, utility suites often have extra tools that help you diagnose problems or automatically run multiple tasks. Avanquest SystemSuite

8 Professional (\$59.95; www.shop.avanquest.com) has a One-Click Optimize feature that removes temporary Internet files, checks the hard drive, runs a hard drive defragmenter, cleans the Registry, and enables Automatic Updates while you walk the dog.

SystemSuite 8 also includes a diagnostic utility that helps you track down problems when your computer is acting funky. The tool checks the PC's hardware, monitors your system resources, and tracks Windows error messages. The Diagnose section also features MediaVerifier, which can check your CDs and other removable media for problems that would prevent them from being read by other

computers and media players. Add to these handy tools antivirus, antispyware, and firewall capabilities, and SystemSuite 8 is a one-stop shop.

Symantec, which is well-known for its antivirus and other security software, also offers a comprehensive utility suite, Norton SystemWorks 2008 Basic Edition (\$49.99; www.symantec.com). Like SystemSuite 8, SystemWorks can diagnose and automatically fix a variety of computer problems. It also has a One-Button Checkup feature that cleans out your system's clutter to ensure better performance. SystemWorks monitors your system performance and provides the tools you'll need to keep your operating system in good shape. ■



Utility suites simplify the tasks that keep your PC running like a well-oiled machine. Avanquest SystemSuite and Symantec Norton SystemWorks can automatically clean out the junk that clogs your operating system.



OPTIMIZE *YOUR* APPLICATIONS & DEVICES

**Keep Your Programs Running
At Peak Performance**

The value of software on a PC extends beyond the office applications, utilities, Internet programs, and similar tools that you rely upon for work and entertainment. Hardware devices also depend on software—in the form of drivers—to ensure they operate as efficiently as possible, even while the PC's overall software environment changes over time.

Failure to keep your software optimized with the latest updates can spell doom for your computing environment. Virtually no software ships today without bugs that can harm performance, and even programs that appear bug-free can encounter problems down the road as other hardware devices and software are added to a system.

Have A Headcount

As security threats have increased in complexity and efficiency over recent years, application developers have gradually integrated more automatic

update features into their products. As a result, optimizing applications through updates has become an easier, less hands-on experience.

Many programs are now designed to automatically search for updates when the host computer is connected to the Internet. If a program with this capability isn't blocked by a firewall from reaching the remote update source, it can instantly search for an update and either inform the user that an update is indeed available or automatically download and install the update with no user interaction necessary.

This "update-upon-access" process certainly has advantages, because it ensures that programs stay updated even if the user forgets to manually check for updates. However, it can also leave applications unpatched until they're actually used, which could introduce security problems if a worm or other malware program is able to access the application.

Because keeping your software optimized is critical to the performance and security of your computer, it pays

to develop a system that ensures each of your programs is regularly updated. Unfortunately, there is no single utility that can find updates for all of your programs (as there is for drivers, as we'll discuss later), so that burden rests on your shoulders.

To keep on top of application updates, you'll need to have an active list of all of your installed applications. If you tend to install programs in locations other than the default location (C:\Program Files), you should compile a text file that lists all of your applications and their locations. However, if all of your applications reside in one folder, you can refer to that folder as your official application list (but be sure to note if you do install programs anywhere else in the future).

Update Time

Once each month, open your application folder (or folders) or application list and open each program one at a time. If the program is configured to automatically check for updates upon opening, allow it to access the Internet and perform the check. If you're using a third-party firewall, you might receive an alert that the program is trying to go online, so be sure to allow the access if you haven't previously done so.

If a program doesn't automatically check for updates, you'll need to take one of two measures. First, check for an update option in the program itself. This might appear on the program's main interface, but it'll more likely appear in one of the menus, such as Tools or Help. Occasionally, you'll find only a link to the developer's Web site.

If the program you're trying to update can't update itself, or if it's having trouble connecting to the remote update site, check the developer's Web site for updates, which can usually be found in the Support or Help section. Some vendors require that you create an account and log in to that account before downloading

updates. Follow the company's instructions for downloading and installing the software update.

This process doesn't always apply to programs included in certain software suites, such as Microsoft Office, which can be updated using a specific update tool. In the case of Microsoft Office, you can browse to Microsoft Office Update (office.microsoft.com/officeupdate) using Internet Explorer and click Check For Microsoft Updates. This utility will search for updates for all of your Office programs and let you decide which to install.

The first time you run through this update checklist, make sure you enable any options you find for automatic updates, because some developers release program updates far more regularly than once monthly. This is especially critical with security programs, which can receive updates on a nearly daily basis.

Driver Detail

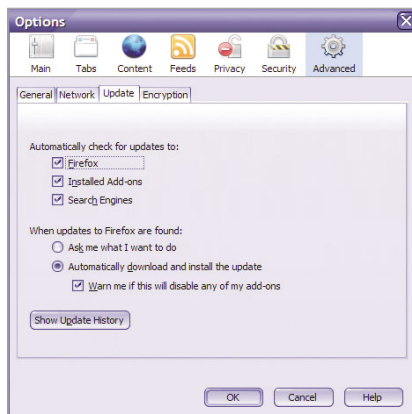
Applications rely on software updates to keep them running at peak performance. Hardware also relies on software updates, in the form of drivers, to ensure that they stay compatible with the ever-changing software environment on your computer.

Device drivers are programs that instruct devices how to communicate with your computer, including the operating system. When drivers are outdated, devices such as graphics cards, sound cards, and others can encounter difficulty when you run certain programs and, in extreme cases, can refuse to work altogether. Unlike many applications, hardware devices don't have the ability to automatically search for the latest drivers and download them. As such, that responsibility belongs to you.

Some users wait until a device is acting strangely before searching for and installing new drivers. However, by being proactive and searching for drivers at a predefined interval (such as monthly), you can avoid

time-consuming, driver-related problems altogether.

There are two primary sources of drivers: those supplied by Microsoft and those supplied by the device manufacturer. Although Microsoft-supplied drivers generally work well, manufacturer-supplied drivers are almost always more current. Therefore, when seeking new drivers for a particular device, check the manufacturer's Web site first (these typically can be found in the Support or Help section). To determine the make and model of devices in your PC, you can check the device's manual or look for the information on the device itself. You can



When updating your applications, always be sure to select any automatic update options. For example, Firefox can automatically download and install updates when available.

also find information about your devices in the Device Manager. To access the Device Manager, right-click My Computer (Computer in Windows Vista) and click Properties. In Windows XP, click the Hardware tab and choose Device Manager. In Vista, click the Device Manager link on the left.

Downloadable drivers generally come in one of two forms: an executable file (with an .EXE extension) or a compressed (or zipped) file. If the file is an executable, close all open programs and then double-click the driver executable to begin the update process and reboot your computer if prompted. If the driver file is a compressed file,

open the file in Windows Explorer or with a decompression program (such as Filzip or WinZip) and extract the files to an empty folder.

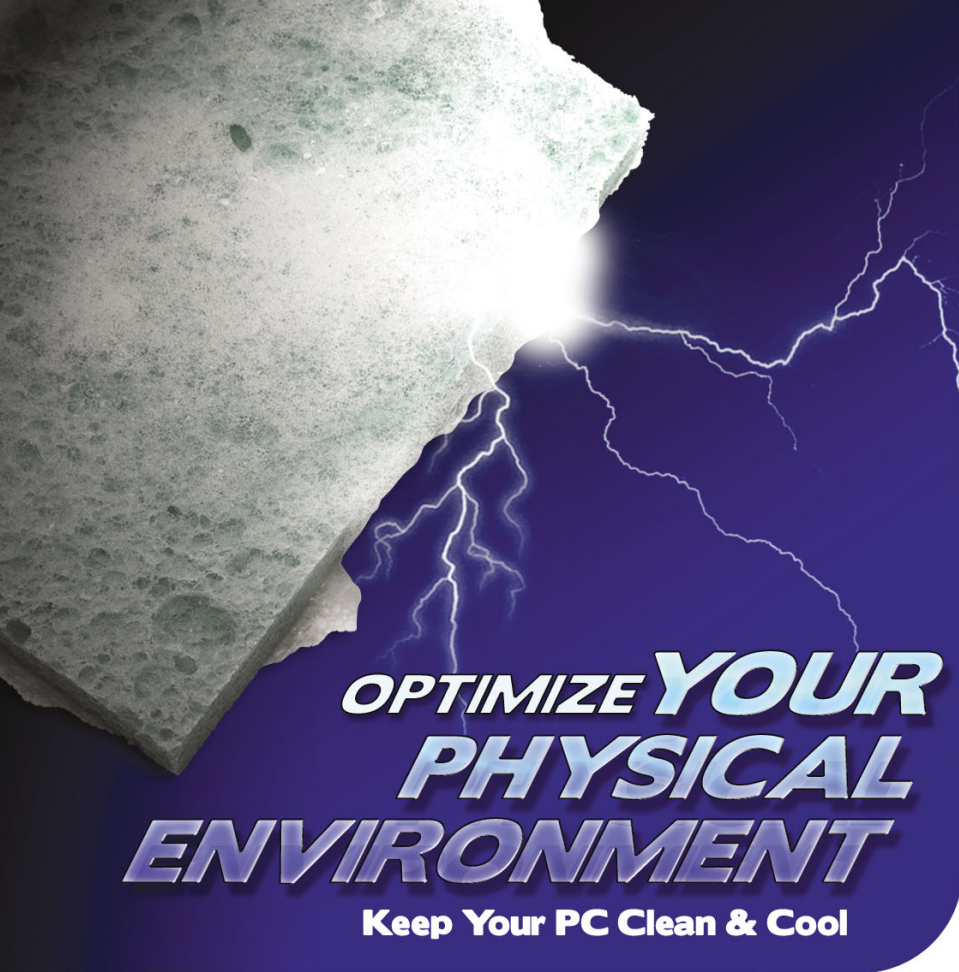
In WinXP, open the Device Manager, browse to the device to be updated, right-click the device listing, and click Update Driver to launch the Hardware Update Wizard. On the first screen, select No, Not This Time, click Next, and select Install From A List Or Specific Location on the next screen. Click Next. Click to select Include This Location In The Search and browse to the driver folder. Click Next and follow the prompts to complete the driver upgrade. In Vista, right-click the device in the Device Manager, click Update Driver Software, and click Browse My Computer For Driver Software. Click Browse to browse to the driver folder, click Next, and follow the prompts to complete the driver upgrade.

If you're overwhelmed by the prospect of searching for and installing drivers for all of your devices, consider purchasing a driver service that scans your system for devices and indicates which ones need updating. For example, DriverAgent.com (\$29.95 for one-year service) can scan your entire system in mere seconds and tell you which of your drivers are current and which are outdated. The service also provides updated drivers for all of your devices.

Tweak Seek

Application and driver updates provide the most effective results when it comes to optimizing your software, but they're not the only means. You can also poke around developer Web sites and software forums for tips on tweaking programs to make them run more efficiently. This step can provide surprisingly effective results, because the default settings for many programs aren't necessarily the best settings. ■

BY CHRISTIAN PERRY



OPTIMIZE YOUR PHYSICAL ENVIRONMENT

Keep Your PC Clean & Cool

Your computer should occupy an environment where it can live up to its full potential.

A computer's worst enemies include heat and dust. They can significantly decrease your computer's performance, or worse, damage or ruin components. Since the beginning of computer time, heat has been an issue, but as computers get faster and more powerful, they generate heat at higher rates. All that heat has to go somewhere, and if your computer isn't running at optimum cleanliness and ergonomic efficiency, it may not be adequately cooling itself, and you could be missing out on productivity, as well as shortening the life of the computer. Dust and dirt are ubiquitous. Houses and offices contain all sorts of particulate matter that can get inside your machine and cause problems if it's not kept to a minimum and not cleaned out regularly.

Bring The Heat

A computer itself generates quite a bit of heat as it operates, especially when

pushed to run audio and video applications, but heat comes from other sources, as well. Direct sunlight, for example, is an often-overlooked culprit of overheating.

Poor ventilation is also a killer. Be sure to allow for proper ventilation near your computer. Don't stack books and papers next to or on top of it, as this can block the vents that cool the inside of the computer. Be sure there is sufficient airflow around all sides of the computer, and don't sit it on top of any heat-generating devices or appliances, such as a television or DVD player.

Dust and dirt are notorious harbingers of impending heat problems. "Dust" and "dirt" are broad terms that include everything you find in the air that isn't oxygen, such as pet hair and dander, particulate matter from cigarette smoke, food particles, and dirt from shoes that has found its way into carpet or onto floors. All of this gunk can make its way inside your computer.

A field of static electricity is created whenever a computer is running, creating a sort of dust magnet. The dust

clings to the monitor, coats the computer case, and gets sucked in to the computer by its intake fan. Once inside, most of it gets blown out by the outtake fan, but some of it manages to settle on components. Once there, it acts as an insulator, trapping heat and forcing the components to work extra hard. As the fans blow those dirty particles through the machine, the dust collects on the outtake fan, which can create airflow problems if the vents become occluded over time.

Clean It Up

Step one for cleaning any computer is to turn it off and unplug it. Don't attempt to clean inside a computer that has power running through it; it can be dangerous for you, but it is also quite hazardous for the machine. Once the power supply is severed, you can start getting your hands dirty.

You'll need to open the computer case to get inside for a deep cleaning. Remove the side cover to expose the components; usually it will come right off by loosening a few screws. Touch a metal part of the case before you dig in to dispel any static electricity in your body that could otherwise zap your computer's parts.

You'll notice that there are a lot of cables of various shapes and sizes snaking through the inside of the case. These can also cause heat problems if they get in the way of ventilation or trap dust. It is a good idea to tidy up the cables before cleaning anything. You can gather them up and fold them into a corner of the computer case, securing them with a few inexpensive nylon ties. If any of the wide, flat cables that connect certain components to the motherboard are mucking up the airflow, you can fold them up out of the way or tape them to the side of the case. Be sure not to pull on any of the wires, put any pressure on any wire connections, or knock anything loose.

Once the cables are organized, it's time to get rid of the dust. A can of

compressed air will usually do the trick. Compressed air must be used with caution because it will emit moisture, which can corrode components. Don't just hold down the spray nozzle and let it fly—use short bursts of air to avoid letting out too much moisture. Tilt the can upright as much as possible and don't point the spray nozzle directly at the target; keep it at least several inches away.

Starting at the top of the case, shoot short bursts of air to blow out the dust inside. This will kick up a lot of junk into the air, so be sure to do it in a well-ventilated area such as a garage. If you want, you can have a vacuum cleaner ready to catch a lot of the dust you stir



Always maintain adequate airflow around your computer to reduce heat.

Once the computer is dust-free, reattach the side of the case, plug in the computer, and power it up.

Maintain That Sparkle

You will periodically have to clean your system no matter what measures you take to cut down on dirt and dust, but there are simple and effective ways to keep pollution to a minimum. For starters, avoid eating near your computer. Food particles will be transferred from your hands to whatever you touch—the mouse, keyboard, media, etc. Don't smoke near your computer—smoke of any kind contains particulate matter. In general,



A few blasts of compressed air will go a long way toward keeping your computer dust-free.

of the time if you can avoid it. Turning it off overnight when no one will be using it is a good idea. Inside the computer case, the fans will generally maintain a good airflow, provided they are kept clean and have enough ventilation. For some extra cooling assistance, simply place a desk fan near the computer and aim it at the intake vent.

Processors and GPUs (graphics processing units) generally come with **heatsinks**, which are copper- or aluminum-based devices that help dissipate heat. If your computer is overheating, you may need to get an aftermarket heatsink. There are plenty of aftermarket heatsinks you can install that will do the job well. If you're not



Keep food—especially the kind with crumbs—away from your computer.

up. Don't let the vacuum extension touch or come especially close to the actual computer—the static electricity the sweeper generates could cause damage.

Fans and intakes will almost always need a good cleaning. Hold the fans in place when you blow compressed air onto them; if they spin too hard, they could cause damage or break. After blowing out the loose dust, use a cotton swab to wipe the excess grime from the fans and the vents. For anything that just needs wiped down—the outside of the case, the monitor, etc.—use a lint-free cloth to gently remove any dust or particles, always being careful not to damage any connections or the monitor's sensitive LCD.

keep your computer off the floor, where most of the dirt in a house resides. If you have pets, keep them away from the computer. For example, if you have a faithful companion that lies at your feet while you work, put the computer on top of the desk so he doesn't touch it.

Be Cool

Keeping your computer and its environment clean will definitely help keep your computer healthier, but there are a host of other methods for actually cooling the machine off.

Keep the room the computer is in cool. Don't leave your computer on all

sure if your computer is consistently too hot, you can purchase software that will monitor and report on computer temperature. If you want to get fancy, you can investigate using a watercooling system, but you should not need anything of the sort unless you overclock your CPU and push it hard all the time.

Keeping your computer clean is not difficult. Provided you exercise a few simple precautions, conduct some regular light maintenance, and keep the computer in an optimal environment, its performance will improve, and it will last much longer. ■

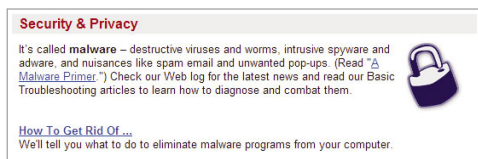
BY SETH COLANER

How To Get Rid Of . . .

You didn't intend to, but somehow you managed to download malware onto your system. It can happen to anyone, but how do you get rid of it? If your computer has been infected with a pesky worm, virus, or other malicious intruder that you don't know what to do about, check out our How To Get Rid Of . . . articles in the SmartComputing.com Tech Support Center. You'll find numerous articles on how to remove worms, viruses, spyware, adware, and other nuisances from your system.



1. Log in to SmartComputing.com and click the Tech Support Center link on the home page.



2. Once in the Tech Support Center, scroll down to the Security & Privacy section. Click the How To Get Rid Of . . . link.
3. Click the link for the item you are trying to remove. You will then be taken to a full article that provides a description of the item and tells you how to tell if it's on your PC and how to eliminate it. Some articles provide helpful links to outside sources (Symantec, Microsoft, etc.) that can provide additional information to help solve your problem. Check out these helpful articles today!

Subscribers—make sure to add these helpful How To Get Rid Of . . . articles to your Personal Library by clicking the Add To My Personal Library link in the upper right of the article. Simply log in, and when you find an article you would like to keep, click the Add To My Personal Library link at the top of the page. Create as many folders as you like and keep your information organized and accessible.

How To Get Rid Of...

How To Get Rid Of...
[How To Get Rid Of MasterBar](#)
[How To Get Rid Of SoBig \(& Variants SoBig.B, SoBig.F, SoBig.F\)](#)
[How To Get Rid Of BadTrans](#)
[How To Get Rid Of Bagel](#)
[How To Get Rid Of Bagel.F](#)
[How To Get Rid Of BugBear.B](#)
[How To Get Rid Of Smash](#)
[How To Get Rid Of AboutBlank](#)
[How To Get Rid Of AllCyberSearch](#)
[How To Get Rid Of Winkiller.A](#)
[How To Get Rid Of AnnaKournikova](#)
[How To Get Rid Of BonziBUDDY](#)
[How To Get Rid Of Bytever](#)
[How To Get Rid Of Click2FindNow](#)

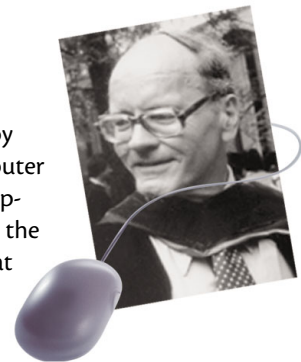


Computer User Groups

Smart Computing's User Group program is devoted to the betterment of the user group community. To find out how (or to just find a user group in your area), go to www.smartcomputing.com and click User Groups on the left side of the window.

John Weber Carr

John Weber Carr is considered by some to be the pioneer of computer education, an achievement we applaud. Learn more about Carr in the *Smart Computing Encyclopedia* at SmartComputing.com.

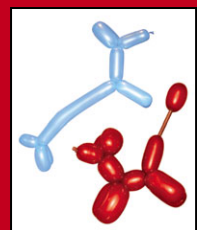


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From *Smart Computing's Fun Site Of The Day* (10/15/07)

Trade Tricks

Have you ever wondered what it takes to be a good birthday clown? It was the birthday clown job description that inspired Matthew Baldwin, a reporter for *The Morning News*, to create the blog *Tricks Of The Trade*. It's a place for waiters, CEOs—and yes, birthday clowns—to share tricks of their trade. As you probably know, there are mysteries and secrets of every profession that make the good ones great. For instance, cartographers will sometimes purposely make mistakes on their maps in order to identify their work and to make sure no one has violated copyrights. If you have a secret skill you're just dying to share, you can contribute, as well.



www.tradetricks.org

Corel Paint Shop Pro Photo XI

Get Organized!

Image Processing

Beginner

11 for
Win2000/XP/Vista

Paint Shop Pro Photo XI enables you to perform a wide range of tasks, but many of these tasks have one thing in common: They all start with the Organizer. The Organizer is a new tool that lets you sort and manage your images. It also lets you email photos, rotate files, and more. By becoming familiar with the basic features of the Organizer, you'll quickly increase your ability to make the most of Paint Shop Pro Photo XI.

The Organizer Layout

Go to View and select Palettes and Organizer. This opens the Organizer as a docked palette. If you prefer, you can go to the View menu and select Organizer Mode and then Document Mode to display the Organizer as a separate window.

The Organizer is composed of three parts: a menu bar, a folder pane, and a thumbnail viewing area. The menu bar sits along the top and contains commands for working with the photos in the viewing area. For example, move the Zoom slider bar to enlarge or decrease thumbnails in the viewing area or use the Sort By drop-down menu to sort them by Date Taken, Filename, or other criteria.

The pane on the left is where you work with folders of photos stored on your hard drive. The application scans your hard drive for image files and places folders containing images in this area. The viewing area on the right is fairly intuitive: Simply select a folder in

the left pane, and thumbnails of the images in that folder are displayed in the image viewing area.

Search & Browse

One of the most common uses of the Organizer is to search or browse your hard drive for images.

Compared to Windows' built-in search and browse tools, the Organizer is more powerful and more flexible. For instance, consider the advanced search feature (click the binoculars icon in the menu bar).

In the Search dialog box, create a search "rule" by selecting a criterion from the first drop-down menu, choosing an action from the second drop-down menu, and entering the desired text in the text box. Click the plus (+) sign to create another search rule. Choose whether the search should return photos that match any of the search rules or all of the search rules by selecting All or Any from the Find Photos That Match drop-down menu and then click Search. The results appear in the thumbnail viewing area.

To browse through images, you'll use the folders pane. The first time you launch the Organizer, it shows the thumbnails of images in your My Pictures folder and lists all its subfolders in the folders pane. You can drill down through your photos by selecting a subfolder to browse through.

In addition, you can add folders to the folders pane. For example, perhaps you have some photos stored in a folder called Wedding, which also contains text documents. Click Add More Folders, browse to the folder's location, select the Wedding folder, and click OK. The folder is added to the Organizer's folders pane. When you click it, in the viewing area you'll see representations of only the image files it contains.

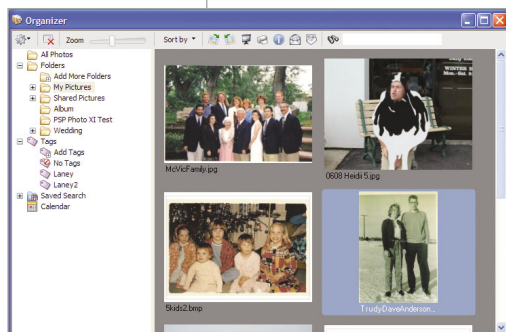
Add Tags

There's more you can do with the Organizer—too much for us to go into here—but we'd be remiss if we didn't quickly mention tags. With tags, you assign a keyword to a photo or groups of photos, and you can then search by this keyword.

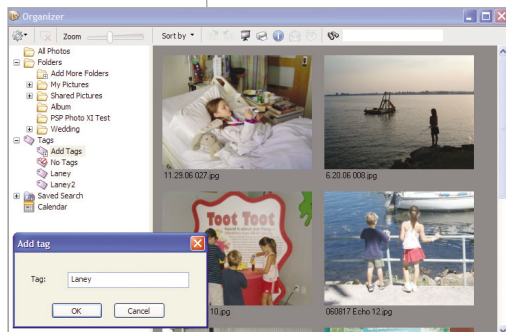
Let's say you want to tag all the photos of your niece, Laney, with her name. In the folders pane, expand the Tags listing by clicking the plus sign and click Add Tags. In the Add Tag dialog box, enter the word Laney and click OK. Next, drag the tag from the left pane onto each thumbnail containing Laney's image.

One final note: Corel has released a patch that adds enhancements to the Organizer. For more information, visit the Web site at www.corel.com. ■

BY HEIDI V. ANDERSON



The Organizer lets you find, sort, tag, and otherwise manage your digital images.



Use the Organizer to assign keywords to your photos.

Excel 2007

Quick Studies
How-To

Spotting Cells Outside The Norm

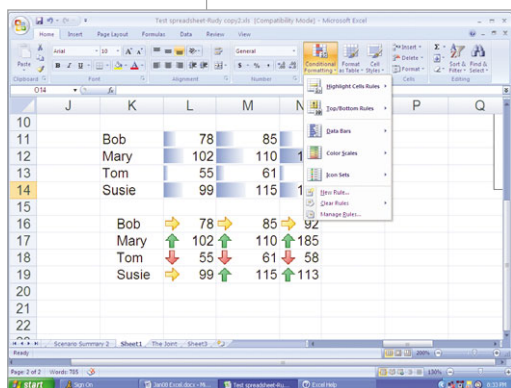
Spreadsheet

Beginner

2007 for
Windows
XP/Vista

Often, when using Excel, we want to identify the key points in fields of data quickly. In this brand of analysis-by-skimming, we need an easy way to spot differences. Excel's Conditional Formatting feature offers a great tool for doing this. This tool lets you set criteria and measure selected cells against them. If the cell's revenue is greater than \$10,000 or below the group average, for example, Excel flags the cell with a different color. Once you master the feature, critical data points have no place left to hide in your worksheets.

Before we walk through Excel 2007's Conditional Formatting feature, note that it includes multiple changes from earlier versions, including useful new options such as applying formatting to nonadjacent ranges. If you turn into a real conditional formatting junkie, you'll especially love this change: While previous versions of Excel recognized only three formatting conditions for each cell, Excel 2007 raises the limit to 64 conditions per cell.



By using various conditional formatting rules, you can quickly spot the relative values of numbers or highlight numbers outside the norm.

apply the most popular conditional formats to cells in your data selection.

The Highlight Cells Rules section lets you mark cells that deviate in a certain way from standards you set. For example, let's say you want to quickly spot any franchise location that didn't make the monthly quota. Use the Less Than rule, which flags any cells with values less than a number you enter here. You also can choose an actual cell for the comparison value, which is useful if the comparison value might change based on things going on elsewhere in the worksheet. You'll notice as you enter a comparison value that Excel highlights affected cells even before you click OK, previewing what will happen.

Some of these rules work with text and dates, too. If, for example, you want to spot every sale made by a certain employee, apply conditional formatting that flags all cells equal to "Smithers."

In the Top/Bottom Rules section, the rules are about comparing cell values against the group as a whole. Here you'll find rules for spotting top 10 and bottom 10 items, the top and bottom 10%, and any cells that are above or below average.

If none of the quick-access rules fit your needs, click More Rules to create your own. Excel provides basic parts you can easily adjust to build more specific rules. You can, for example, make a rule to highlight cells in the top 22% of a range or a rule that flags any duplicate values in the list.

Once you've applied a rule, you can change how it works. Click Conditional Formatting, Manage Rules, a rule you need to change, and Edit Rule. In the resulting dialog box, you can change the rule's conditions (such as altering it to flag items in the top 20% instead of the top 10%) and colors, fonts, and other formatting the rule uses to flag cells.

Create Rules

We recommend beginning a little more simply—with one formatting condition. Start by choosing the Home tab and clicking Conditional Formatting in the Styles area. The top two menu options present a variety of preformatted rules that let you quickly

Kick Up The Visuals

Want an even quicker visual cue about cells outside the norm? Check out the options listed lower on the Conditional Formatting drop-down menu. These tools apply colored scales, chart-style bars, and icons to cells based on their values. The Data Bars feature, for example, applies proportionally sized colored bars to each cell.

Many of these special rules make little sense until you modify the data points Excel uses to determine which cells get which color, bar, or icon. To do this, use the Manage Rules feature discussed above.

Finding Or Removing Conditional Formats

Eventually, you may apply so much conditional formatting that you're not even sure which cells are under its spell. To find the conditionally formatted cells, head to the Home tab's Editing group, click Find & Select, and choose Conditional Formatting.

If you're ready to eliminate any conditional formatting, click the Conditional Formatting button and Clear Rules. There you can choose to remove them from the selected cell or the entire sheet. ■

BY TREVOR MEERS

Microsoft Money Plus Premium

Money's Insightful New Feature

Quick Studies

How-To

Personal Finance

Beginner

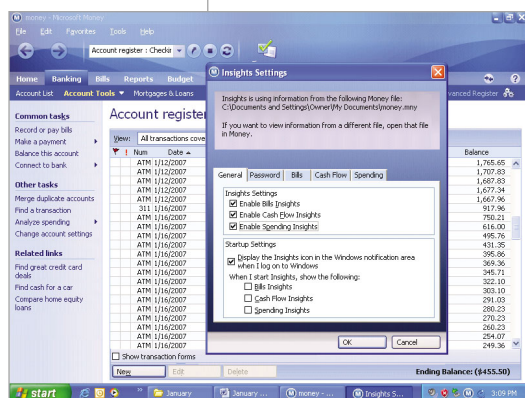
2008 for
Windows
XP/Vista

The new Microsoft Money Plus Premium includes many new features that will help make your money management tasks easier. The Insights feature is one such new addition. It's a bit like a virtual sticky note on your monitor but with many more capabilities and much less falling off and reapplication. We'll take a look at Insights and how you can make this new feature work for you.

In The Know

Insights are a great way to keep track of what's going on in your checkbook without spending time in Money.

The Insights feature lets you set up customized alerts that will display as soon as you log on to Windows, keeping you informed of your financial status without even opening Money. Money will update you about certain financial events via the Insights alert icon (a black and yellow exclamation point) in the Windows notification area, which is to the far right of the Taskbar. Similarly, a red and white "X" will alert you to any errors.



The Settings dialog box in Money's new Insights feature lets you control how and when Insights display.

Pick Your Poison

There are several types of Insights you can set up to suit your different needs.

Bills. Bills Insights is a good way to remind yourself of upcoming or overdue bills. You won't need to even open Money to receive the notification—an alert will

appear in your Taskbar at the bottom right of your monitor. In order to get this Insights information, you'll first have to set up your bills in Money. Then the program can help you track bills for which you need to make a payment, write a check, or make a transfer. However, Insights won't remind you about bills you have set up to be paid automatically, by direct debit, or automatic payment.

Cash Flow. Cash Flow Insights provides a quick snapshot of the current credits and debits in each account you have set up in Money. So if you're headed to the mall and want to know how much

you can spend, a quick look at the Cash Flow Insights icon in your System Tray will do the trick. Also, if you've set up Money to receive automatic updates online, your Cash Flow Insight will reflect the most current data from your last online update.

A date stamp in Cash Flow Insights lets you know how current the information is. If you want to make changes to an account shown in Cash Flow Insights, you'll have to open Money and make the changes to the account there. But if you just want to open the register for an account you are looking at, simply click the account icon in the middle of the Cash Flow Insights window. You can change the range of dates for which Cash Flow Insights displays information by clicking the Settings link in the lower-left corner of the Cash Flow Insights window.

Spending. Spending Insights works similarly to Cash Flow Insights in that it provides a quick snapshot of the state of your budget. Spending Insights works with Money's Spending Tracker feature in the budget you have set up in Money to help you stay within your monetary limits. Once you have set up a budget and placed certain budget categories in the Spending Tracker, you can keep an eye on those categories without opening Money.

Each month, Spending Insights will display your current spending and your budgeted spending so you can avoid going over your limit. When you get to 75% of your total budgeted amount in a category you are tracking, Spending Insights will display an alert notification. The notification will also display when you have reached 100% of your spending in that category.

Insights Setup

Insights should be automatically turned on when you install Money Plus, but if you previously turned off the feature and want to turn it back on now, here's how: Click Start, All Programs, Microsoft Money Plus, and Insights. Now you can choose which of the three Insights you want to use. Click the Insights icon in the Taskbar and then click Settings. In the General tab, select or clear the checkboxes for the Insights you want to enable or disable and then click OK. This is a good place to also determine other startup settings. ■

BY JENNIE SCHLUETER

Microsoft Word 2007

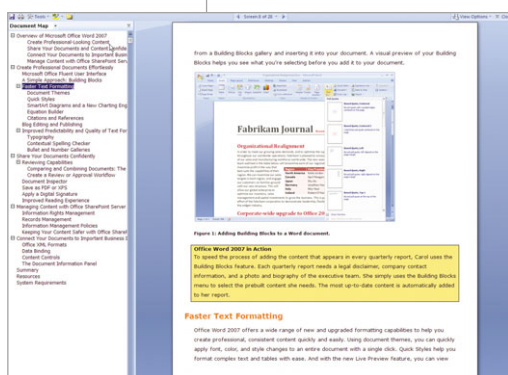
View Eases Document Reading

Word Processing

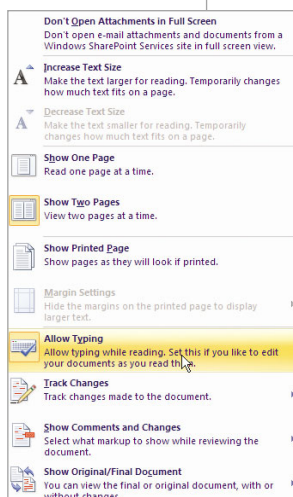
Beginner

Version 12 for
WinXP/Vista

One of the many features that have been updated in Word 2007 is Full Screen Reading (previously Reading Layout). This renamed feature is still useful when you want to focus on just the text of the document, and Microsoft has added some new tools that make it even more helpful.



The Document Map provides an excellent navigation tool for highly structured documents.



You need to activate the Allow Typing function to edit a document in Reading Layout.

Available Views

Word 2007 provides five views: Print Layout, Web Layout, Full Screen Reading, Outline, and Draft. Access these by clicking the View tab on the Ribbon or by clicking the appropriate button at the bottom right of the Word window.

Print Layout lets you see most of the page elements as they would appear if you printed the page. Web Layout shows you how the page would look in a Web browser. Outline is helpful if you are creating a structured document with levels of headings. Draft is the simplest view, showing just the main text, without graphics, headers, etc.

The Full Screen Reading view shows the current document in two book-style columns by default. You can use a single column if you have a small monitor (more on that in a moment).

This view isn't suitable for making changes to a document's actual layout. It is, however, very useful when you want to read, lightly edit, highlight, or comment on a document.

Reading Tools

Find a multipage document and open it in Word 2007. View it in Full Screen Reading view via the Ribbon or the buttons at the bottom of the window. To go back to Print Layout view at any time, click the Close button in the upper right of the window.

The first thing you'll likely notice is that the document is given priority on the screen. It appears without the Ribbon or other large tools. Instead, there is a thin Screen menu at the top.

What we usually think of as pages are called screens in Full Screen Reading view. This distinguishes between two different things: what you are seeing (a screen) and what would actually print on paper (a page). Navigate from screen to screen by clicking the arrows at the bottom of the screens or on either side of the Screen menu. Between the arrows on the menu, the currently viewed screens are listed. Click this area to bring up a menu that provides more ways to move between screens.

Viewing & Editing Functions

The View Options drop-down menu on the right side of the Screen menu lets you set how to view the screens, as well as whether and how to allow editing.

You can increase or decrease the text size for readability. This *does not* change the actual size of the text in the document. You can choose to Show One Page (screen) instead of two at a time. You can also choose Show Printed Page, but if you want an accurate rendering, use Print Preview instead (click the Office button, hover over Print, and select Print Preview from the pop-up list).

Click Allow Typing to make editing of the document possible. The next three options let you use the Track Changes set of functions. Editing in Reading Layout should be restricted to text (even though you can adjust pictures) because you aren't looking at actual print layouts in this view.

Other Tools

There are other functions available on the left side of the window. There are buttons for Save, Print, Text Highlight Color, and Insert Comment. Also, the Tools drop-down list provides functions that are available in different areas of the Ribbon in other views. You can select words in the document and click Research to access reference sources. Activate a language by clicking Translation ScreenTip to see a translation of words as you hover over them. Open the Find And Replace dialog box by clicking Find.

Check out Reading Layout as an alternative to printing a hard copy of a document for reading, or when you need to edit or comment on text. ■

BY TOM HANCOCK

Online

Quick Studies
How-To

Keep Track Of Travel Plans With Triplt

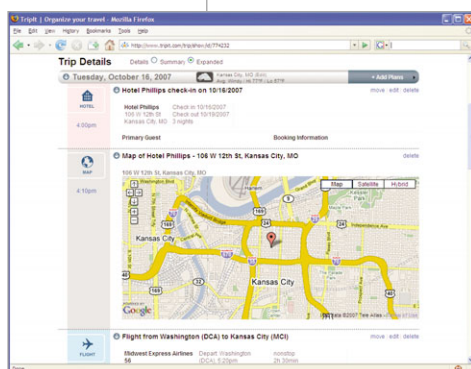
Triplt

Beginner

If you travel regularly for business or pleasure, Triplt could make organizing your excursions a little easier. Triplt (www.tripit.com) can't fit more in your suitcase, but it does gather all of your travel information in one spot, much of it automatically.

Whenever you receive one of those confirmation emails from online travel sites, airlines, and the like, you can forward it to a special Triplt email address. The free service parses out the relevant details, such as dates, flight numbers, and times, and adds them directly to the itinerary you're constructing. As you continue to book other reservations for the trip, say a rental car or a side trip to another location, Triplt updates the itinerary. You can add other information to your growing itinerary, as well, such as notes, links to Web sites, maps, and other content. When you're ready

to go, Triplt makes a nice printed guide for reference during your journey.



Triplt automatically keeps track of your travel itineraries by extracting relevant info from travel site confirmation emails.

All Aboard

One way to start a new Triplt itinerary is to forward your flight confirmation email to plans@tripit.com, which is the general incoming Triplt mailbox. Triplt knows that the in-

formation is about you because your return address is on the message. If you've never set up a Triplt account before, the site starts one automatically and sends you an email with instructions for how to sign in. Triplt continues to add capabilities for reading emails from travel sites. It already works with some of the major players, such as Expedia, Travelocity, and Orbitz. Forward a confirmation message from one of these services, and your itinerary will be up and ready when you log in to your account. If Triplt was not able to parse the email you sent, it gets initially categorized as a "note" with the text of the email itself. You can file it to one of your existing trip itineraries and then decide whether to keep it as text on that trip's page or use the information to manually enter the flight, car rental, or other information it contains.

The advantage to entering the information manually is that Triplt can then add related content on its own. For instance, we clicked Add

Plans and chose Add Hotel to enter a hotel reservation. In the screen that followed, we entered the hotel name, address, and dates for check-in and check-out. The hotel information was added to the itinerary on the trip page, immediately followed by a Google map showing the actual location of the hotel.

Some information Triplt incorporates on its own could be better. For instance, Triplt displays each day's average weather, based on the history of that location, in the date headers. That's fine for trips planned for well in the future, but it's confusing when your trip is coming up in a few days. Why not switch to an actual forecast when it's available?

Round Trip

With the basics of your trip in place, you can start to add additional information on your own. For example, place maps in your itinerary by clicking Add Plans and then clicking Add Map/Directions. You can specify a general map of a particular location or add directions from one place to another. Maps are associated with a specific date in your itinerary, so you can keep everything organized.

Other facts you might want in your itinerary—lists of restaurants to try, contact information for people you are meeting, etc.—is taken care of with notes. To create a note, choose Add Note from the main Add Plans menu. You can type directly into the note field or copy and paste text from another Web site. There's also a field to enter a Web site address. A link below allows you to paste pictures, as well. Like maps, notes get saved under a particular day in your travel plans. Triplt also offers a bookmarklet called Trip-Clipper, which you can drag to your bookmarks toolbar. When you run across a Web site you'd like to reference on a Triplt itinerary, click the link and a new note form appears with the Web site address already entered. You can type or paste in some additional text and save it to the relevant trip file.

Overall, Triplt makes a great centralized repository for your travel plans. And you can always buy another suitcase when you get there. ■

BY ALAN PHELPS

Broderbund Print Shop Deluxe 22

Create A Slideshow Presentation

Desktop
Publishing

Intermediate

22 for Windows
2000/XP

The name of Broderbund's desktop publishing program, Print Shop Deluxe 22, indicates its orientation toward producing print projects. As it has expanded, the program has introduced capabilities beyond print. One of those is the ability to produce slideshows. Print Shop will never be mistaken for Microsoft PowerPoint. But these slideshows could even be used as part of a presentation.

There is a special print project available in Print Shop called Presentations, but we are talking in this column about a presentation that you would project onto a screen.

drop the image into position. Remove a slide by right-clicking it and choosing Remove Slide.

Click Play and Set Slide Show Options to open the Slide Show Options dialog box. The setting we are primarily concerned with is Set Time Between Slides. This title is a misnomer. The setting actually determines how long each slide will remain on-screen. By default it is set at four seconds. Clearly we won't be able to use Print Shop for a presentation if the images are going to change this often.

Make Slide Changes Manually

The only ways to control the flow of the slideshow once it starts are to press the Spacebar to go to the next slide or to press ESC to close the show entirely. But we can get around this limitation by setting the timing to a very high number. Change the time between slides to 3,600 seconds (one hour per slide). Putting in this large number gives you manual control over when a new slide appears. When you are done commenting on a particular slide, press the Spacebar to bring up the next one.

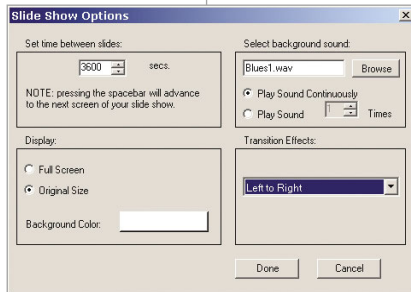
Set the other characteristics for the slideshow in the Slide Show Options dialog box, such as a background sound and background color. Transition Effects may cause the player to skip a slide when you advance by pressing the Spacebar. Set it to None. Click Done when you are finished.

Try Out Presentation

Click Play and Play Slide Show to practice your presentation along with the slides. Make any adjustments and click Slide Show and Finish. Choose Create A Self-Playing Slide Show on the left of the dialog box and Save on the right. Do not choose Burn To Disc even if you are going to put the presentation on a CD. You can do so later after running the slideshow for one last check. Click Next.

The Slide Show Options dialog box appears again. Click Done, give the slideshow a name, and save it. Now you can put the slideshow file on a flash drive or burn it to a CD to take to the location of your presentation. Be sure the site will have the equipment you need if you don't bring your own.

Presentations created with Print Shop don't have the polish for display in a large company's boardroom. But you can put one together for other occasions without expensive, complicated software. ■



Hot Shots Viewer

Slideshows and screen savers are both created through the Hot Shots Viewer in Print Shop. Click Tools and Hot Shots Viewer if it is not visible on-screen. There are four menu options on the left side of the Hot Shots Viewer: Slide, Slide Show, Play, and Help. Click Slide Show, click New, type a name for the project, and then click OK. The Viewer shows an image strip with five empty slots where you can place images. More empty slots will open up as you place images.

Click Slide and Import From Disk. The Open dialog box shows the My Pictures folder by default. You can also browse to other areas for images. Click the View menu in the dialog box and choose Thumbnails so you can see a small version of the photos. Click Open after making selections.

Rearrange images on the image strip by clicking and dragging them to a new position. The Viewer displays only the five slots, even if you have placed more than five images. That makes moving an image from one end of the image strip to the other a little tricky. To do this, click the image and drag it to the scroll bar arrow at the bottom of the viewer. Now

Print Shop doesn't have an abundance of options for creating a slide show, but sometimes simple is good enough.



Add images to the slideshow through the Hot Shots Viewer. Vector and raster files are both supported.

WordPerfect Office X3

Signatures In WordPerfect MAIL

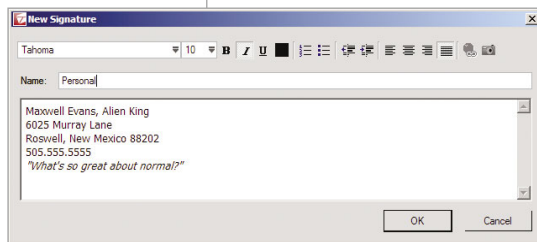
Office Suites

Intermediate

Win98SE/2000/
XP/Vista with
update

If you've read many emails, you've likely come across a signature on a message. A **signature** is a block of text that often provides essential identifying information for your recipient, such as phone and fax numbers or email and Web addresses.

Like many email clients, WordPerfect MAIL lets you add a signature to your emails. You can create as many as you like. For instance, you might choose one to use for work and another for personal messages.



Choose style and formatting in the New Signature dialog box.

Create Signatures

The first step is to click the Configure menu in MAIL and choose Signatures. In the Configuration dialog box, click Add. In the

New Signature dialog box, type a name for the signature file in the Name field—this is just for file purposes; it won't appear in the signature itself.

Tab to the primary text box and type what you want to appear as your signature. You can change the text's appearance using the Font and Size lists. Formatting is also available, with Bold, Italic, and Underline buttons. You can also change the text color and justification, indent text, and add a bulleted list. Just press the corresponding button.

When finished, click OK. Keep in mind that attributes such as color only appear if your outgoing message is formatted using HTML.

The new signature appears in the Available Signatures list under the name given above. Add more signatures by repeating the steps. They'll appear in the Signatures list when added.

Get Interactive

You can add both hyperlinks and images to a signature file. Click Configure and choose Signatures again. If you're going to start anew, click Add. If you want to edit an existing signature, click the correct one from the display list and click Edit. In the text box, type and select the text you want to be a clickable link or select the existing text you want to link. Click the Hyperlink button with the little globe and chain link.

The Hyperlink dialog box pops up; choose a hyperlink type from the Type list box. There's plenty to choose from, but you'll likely use the http: and mailto: options the most. Next, type the URL in the URL text box. Click OK to complete.

Adding an image to a signature works in a similar way. Return to the Configuration dialog box and again choose Add or Edit. Click the Add Image button, represented by a camera. In the Picture dialog box, click Browse to locate and select your image. Next up is the Alternate Text box. What you type here will display instead of the image when images are not available on the recipient's computer; it also appears while the image is loading.

In the Layout section, you need to choose an Alignment option and a Border Thickness. The default Alignment setting is Baseline, which aligns the bottom of the image with the baseline of the text; there are several others to choose from, so you might want to play around with them a bit. For Border Thickness, the number you type specifies the width in pixels of the border around the image. Leave it blank if you want it borderless.

You can also add space to the sides and/or the top and bottom of the image. Type a value for the number of pixels in the corresponding Spacing box. Click OK to apply.

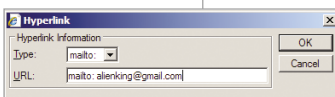
Add Signatures

To add a signature to an individual message, first click Compose. Then just click the Down arrow next to the Signatures button on the toolbar and choose a signature file from the list.

You can also associate specific signatures with accounts or aliases. When you send a message, WordPerfect MAIL uses the default account and signature. To choose a default signature for an account, click the Configure menu and choose Accounts And Aliases. Choose an account from the list and click Edit. From the Edit dialog box, choose a signature from the Signature list and click OK.

It's relatively easy to create a signature—at least technically. The difficulty comes in trying to decide what to include in the text. We recommend keeping it brief, both for appearance and for conserving drive space on email servers. If you're planning on including a favorite quote, choose a pithy one. ■

BY ANNE STEYER PHELPS



Use your signature to link to a Web site or email address.

PowerPoint 2007

Sharing Feedback On Presentations

Presentation

Advanced

2007 for
Windows
XP/Vista

Ah, feedback. It seems so insightful when we're offering it on someone else's work and so small-minded when someone returns the favor. Still, collaboration is part of office life—and Office life, for that matter. Previous PowerPoint versions had a Send For Review feature built right in to streamline the process of shipping your files to colleagues for comments via email. That tool didn't make the leap to PowerPoint 2007, but the program still includes features for getting others' input on your work. Now everyone just has to comment on files and send them along as email attachments.

Adding Comments

To add a comment, open the presentation in Normal view and look for a slide you want to comment on. Next, click the Review tab and then the New Comment button. A small text window appears with the date and your name on it (assuming you properly entered your name when installing Office). This information will be visible to whoever

opens the file from now on, so don't consider the Comments feature a safe place for anonymous sniping.

Now you can type your comments. There's room to write a short book here, but try to restrain yourself. If one of your comments is so good that you want it to

appear on several slides, highlight the words inside the text box and press CTRL-C to copy them. Now go insert a new comment box in the appropriate spot, click inside the new comment box, and press CTRL-V to paste the text there.

Editing Comments

By default, PowerPoint drops the icons for all comments into the upper-left corner of a slide. But if you'd like to position a comment box closer to a graphic, text box, or other item it refers to, just click the comment box icon (not the text box itself) and drag it to the spot where you want it. You even can place a comment box outside a slide's boundaries if you want.

If you need to revise something you write in a comment, click the icon. You can't click inside the text box to make changes. The trick is to double-click the comment box. When you see it open in a larger size, it's ready for editing. You also can open it for editing by clicking the box and then clicking the Edit Comment button on the Review tab.

Viewing & Deleting Comments

If you think a file contains reviewers' comments, but you can't find any, head to the Review tab and click the Show Markup button, which acts as a toggle for turning comments on and off. Also, keep in mind that the comments are visible only when you're looking at slides in Normal view.

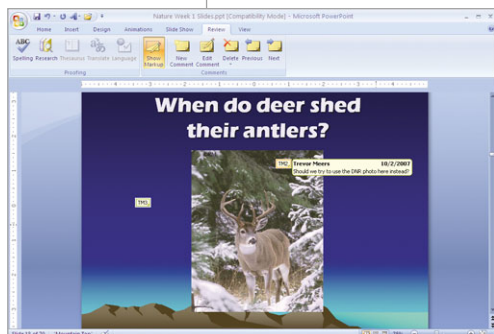
Because PowerPoint places icons for new comments in one corner, they often get hidden behind one another. You can make sure you read every comment by clicking a visible one, reading it, and then clicking Next on the Review tab. (If you want to go back to one, you can click Previous.) The Next button also proves handy even if you can see all the comment icons. Clicking the button to move methodically through the notes is easier than moving the mouse around to make sure you click all the icons. Plus, it automatically moves to the next slide if that's where the next comment is.

When you're done with a comment, you can delete it just by clicking it and pressing the DELETE key. The Review tab's Delete button offers a couple of more thorough options, letting you delete every comment on a slide or all the comments in the entire presentation all at once.

Commenting The Old-Fashioned Way

In offices that haven't quite adopted the paperless lifestyle (or if you'll be reviewing a presentation during a flight), circulating a hard copy of the presentation for physical markup may still be the best approach. Many users find the best printed format for this is three slides printed with lines beside each slide thumbnail in Handout mode. To print your slides this way, click the Office button, click the arrow next to Print, and click Print Preview. Choose Handouts (3 Slides Per Page) in the Print What drop-down box and then click Print. ■

BY TREVOR MEERS



Inserting comments provides a clean, clear way to offer feedback when several people work on a presentation together.

Find Solutions Today!

Let's face it, there's nothing more frustrating than a computing problem . . . except maybe not knowing where to go to find answers. The next time your computer doesn't boot up or your printer won't print, search the Tech Support Center at SmartComputing.com. Simply click any one of the Top Subject links next to the search box, or type in a search of your own. You'll find answers from our Solutions Knowledgebase and Basic Troubleshooting articles, as well as additional results from our general Editorial Archive.



You can also find answers by browsing the Common Problems and Frequently Asked Questions areas that provide helpful translations and easy-to-understand solutions to numerous computing problems.

Simply log on to SmartComputing.com and find the answers you're looking for today!

1. Go to www.smartcomputing.com and click the Tech Support Center link.

Search The Tech Support Center

How To Use This Search:
Are you having trouble importing photos from your digital camera? Just type in **digital camera** below to see all the resources we have for solving problems with digital cameras. Don't include words like **problems** or **malfunction** or type in long phrases. Use one- or two-word searches, but don't type in extremely broad terms like **windows** or **computer**. Use "Top Subjects" links whenever possible.

Enter a subject to search by:

Top Subjects

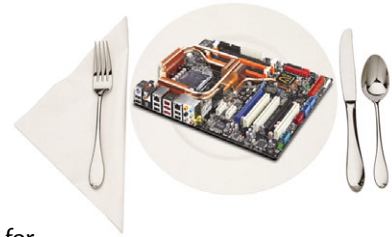
1. [Red X](#)
2. [Safe Mode](#)
3. [Hard Drive](#)
4. [Startup Menu](#)
5. [Outlook Express](#)

2. In the Enter A Subject To Search By: box, enter your subject of choice and click Search.
3. Browse articles from various sections, including the Solutions Knowledgebase, the Q&A Archive, and much, much more!
4. If you can't find an answer to your question, try posting your question on our reader-response Q&A Board. (Keep in mind that this feature is available only to paid subscribers.)

Be sure to store all of your helpful articles and information in your Personal Library to keep for future reference. Simply log in, and when you find an article you would like to keep, click the Add To My Personal Library link at the top of the page. Create as many folders as you want to keep your information organized and accessible.

Web-Only

If this month's issue of *Smart Computing* left you hungry for even more technology information, go to SmartComputing.com for bonus material. Subscribers can click the Web-Only Articles link on the left side of the page for additional articles.



Tech Support

If even our vast tech support database doesn't fix your computing problem, give us a call. We offer free tech support to subscribers (one free call for those of you who haven't subscribed yet). Call (800) 368-8304 or go to our Tech Support Center and click on the Email Us link on the right side of the page to get started.



Take a look at past Daily Tips by scrolling down to the Daily Tip Archive section of SmartComputing.com and clicking the link of the same name.



From *Smart Computing's* Daily Tip Archive

Break In Electronic Gear

A few manufacturers institute a rigorous burn-in period for expensive, high-end electronics gear before selling it to consumers. You should do that, too, even if you haven't bought top-of-the-line equipment. The idea is to "force" flaws in the equipment to show up as quickly as possible rather than a year or more later, when the warranty's run out. Install and turn on your new components right after you buy them and give them a thorough workout, longer than with normal use. Run that DVD player or DVR as often as you can for a few weeks, even if you're not listening to or watching the results. This advice doesn't apply to speakers, though. Speakers have far less electronics than other A/V gear, and used wisely, at a reasonable volume level, will last a lot longer.



Quick Tips

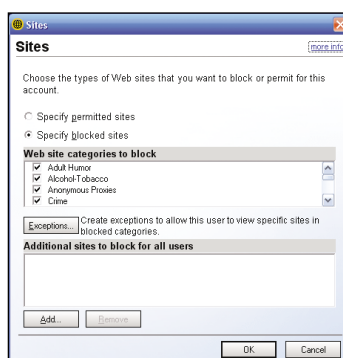
Secrets For Succeeding In Common Tasks

BY STEPHEN J. BIGELOW

Parental Controls

Question: Is there an easy way to block certain Web sites to keep my child from seeing them?

Answer: You can use the Parental Control feature in security software such as NIS (Norton Internet Security) to block unwanted Web sites. For example, open the NIS control panel and select the Parental Control feature. Click Configure and then click the Sites button. Now you can block sites by ratings. Many reputable Web sites voluntarily include classification tags that support browser blocking. For example, if you select the Crime checkbox, any site that designates itself with a crime rating will be blocked. Of course, not all Web sites are reputable or apply all of the appropriate classifications, so blocking by category is imperfect. You can also block specific sites by manually adding



undesirable URLs to the blocked list, or you can block all Web sites and permit only specified URLs for an allowed list.

If you use Windows Vista, you can take advantage of its built-in Parental Controls. Administrators can assign parental controls on new or existing accounts. In Control Panel, under User Accounts And Family Safety, select Set Up Parental Controls

For Any User and then select a user for whom you want to set the controls. With Parental Controls on, you can set usage limits, control Web access, and more.

Parental control software, such as Norton Internet Security, will allow parents to block undesirable Web sites by category and specific URL.

Printing

Question: How can I keep my color photo prints from getting dull or decaying?

Answer: As with regular photos, it is natural for inkjet photo images to dull over time. However, there are a few things that you can do to extend the life of your inkjet photos. Always use name-brand paper that emphasizes long-term color stability.

Once printed, the image's life will also depend upon storage. Keep the inkjet photo away from prolonged exposure to sunlight and extreme temperature or humidity. Also, don't touch the image

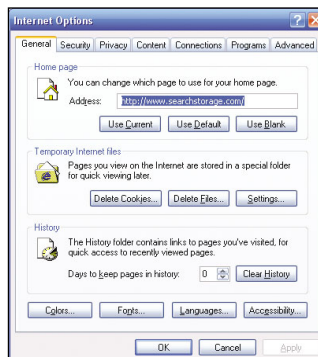
because oils from your fingers can dull the image in the places where you touch it, so keep the image protected behind a glass or plastic covering.

Finally, consider the art of digital scrapbooking by placing your digital images on CD or DVD for long-term storage. This is often far cheaper than printing each photo, and it's easy to duplicate the discs for family and friends. The digital image files never fade, and you can always print interesting images without worrying about their long-term life; if it fades, you can always make another from the disc.

Internet Explorer

Question: How can I set a new home page for Internet Explorer?

Answer: Launch Internet Explorer. Open the Tools menu, choose Internet Options, and then select the General tab. Under the Home Page section, simply type or paste the new URL into the space provided and click the Apply button. Click the OK



button to close the Internet Options dialog box. Browse around to some other Web sites and then click the Home button. You should now be taken to the new home page.

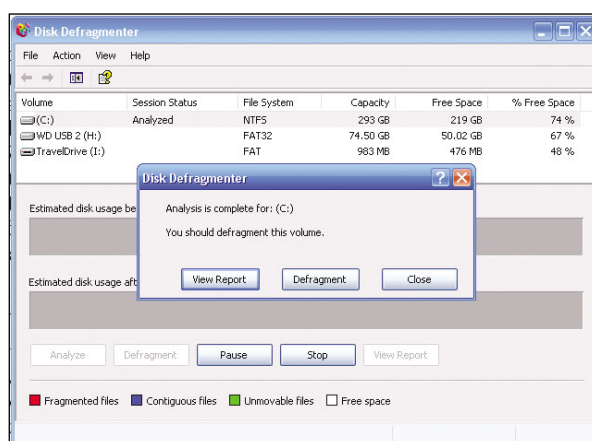
Use the Internet Options dialog box to set a new home page in Internet Explorer.

Hard Drives

Question: With today's hard drive technologies, is it still necessary for me to defragment my hard drive?

Answer: While hard drives have gotten a lot bigger over the last few years, they still operate and store data pretty much the same as they always have. In fact, fragmentation can eventually become more of a problem on today's huge hard drives, so it's worth checking the fragmentation level on your drives periodically and defragmenting the drives if needed.

Start by checking the amount of fragmentation. In Windows XP, click Start. Go to All Programs, Accessories, System Tools, and Disk Defragmenter. Select the drive you want to check and click the Analyze button. In a few moments, Defrag will return a report and offer a suggestion of whether to defragment the drive.



Windows' Disk Defragmenter utility will determine the level of file fragmentation on your hard drive and allow you to defragment the entire volume.

Liquid Cooling

Question: Is it a good idea to liquid-cool my processor? Why do people use liquid cooling?

Answer: Liquid cooling can carry away far more heat from an object than forced-air cooling—that's why cars use liquid-filled coolant channels and radiators. Very few commercial desktop computers use liquid cooling, and average computer users should not need to retrofit the traditional forced-air CPU heatsink/fan with a liquid-cooling mechanism. However, PC enthusiasts that choose

to push the performance of their computers may adopt a liquid-cooling system to manage the additional heat produced by aggressive processor overclocking.

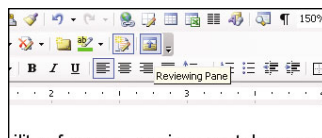
Remember that liquid cooling carries risks. Leaks in the cooling loop can result in premature processor failure. The coolant can also damage components on the motherboard and expansion cards. Therefore, most manufacturers leave liquid cooling as an aftermarket system upgrade.

Microsoft Word 2003

Question: I see that my boss has inserted comments in my Word document, but I don't see the comments in the actual document itself. How can I see the comments?

Answer: In Microsoft Word 2003, make sure that the Reviewing toolbar is open. Go to View, click Toolbars, and select Reviewing. This will display a toolbar with a Reviewing Pane button (the last

button on the right side). Click the Reviewing Pane button to open an area at the bottom of the document that shows the comments, additions, deletions, and so on. Click the Reviewing Pane button again to hide the comments and see the full document window.



Microsoft Word lets you easily change the document view so that you can see any comments or other changes inserted into the document.

Beam Me Up, Scotty!

Seriously Smart Phones

Today's smartphones are a far cry from the hefty "brick" cell phones that were famous in the 1980s. Not only do these phones offer far better performance when it comes to making a call, they also boast an array of features that become indispensable after just a few

days of use; whether it's checking your email, surfing the Web, taking digital snapshots, or sending text messages, today's phones would make James T. Kirk green with envy. (Prices of phones may vary depending on which calling plan you choose and discounts offered by retailers.) ■

RIM BlackBerry Curve 8320

\$449 • www.blackberry.com

To say that BlackBerry has built up a loyal following is an understatement of the highest magnitude. Devotees are legion and stories of "crackberry thumb" syndrome commonplace. Why the adulation? It's because of devices like the Curve 8320. With one of the easiest-to-use keyboards, Wi-Fi support, as well as the best integration with corporate workplaces, the Curve 8320 is almost on par with Spock's Tricorder. The Curve includes 64MB of flash memory that can be supplemented by adding microSD cards. The Curve is also lithe where it counts; at only 4 ounces, it's one of the lightest BlackBerry models available. For on-the-go Internet access, the Curve uses EDGE (Enhanced Data for GSM [Global System for Mobile] Evolution) networks and can serve as a modem for your notebook computer, as well.





Nokia N95 8GB

\$750 • www.nokia.com

The N95 uses the Symbian OS (operating system) to power its array of features and utilities. With support for HSDPA (High-Speed Downlink Packet Access) 3G (third-generation) networks, the N95 can download files at speeds of up to 3.6Mbps (megabits per second), and with 8GB of internal storage, the N95 has plenty of space for your ringtones, video clips, and other space hogs. For the shutterbugs among you, the N95 has an excellent 5MP (megapixel) camera that also does double-duty as a videocam capable of capturing up to 30 frames per second. In case you lose your sense of direction while becoming an amateur videographer, the N95 has a built-in GPS (global positioning system) to help you find your way.



Palm Treo 755p

\$579 • www.palm.com

Palm wrote the book on PDAs (personal digital assistants) and smartphones, only to find itself in a struggle to keep up with the competition. Fortunately for Palm, the Treo 755p is more than a handful for Palm's competitors. Using the venerable Palm OS, the Treo 755p is powered by an Intel Xscale processor that gives the 755p plenty of oomph. Whether you're making a conference call with a Bluetooth headset or checking your email while waiting for a flight, the Treo makes staying in touch a snap. The Treo has a built-in 1.3MP camera, built-in Google Maps, and an expansion slot for a miniSD card. If you run down its battery, simply swap in a spare lithium-ion battery that should be good for up to just over four hours of talk time.



Helio Ocean

\$415 • www.helio.com

The inspiration for the Ocean must have come from a designer's Swiss Army knife. The Ocean features two sliding keypads; one a full QWERTY keyboard for texting, surfing, and anything requiring fast typing, and a second numeric keypad for dialing phone numbers. For capturing still or video footage, the Ocean uses a 2MP camera and 200MB of internal storage. Top that off with a microSD storage slot, and you can leave your digicam at home. The Ocean uses Helio's 3G data network for speedy downloads.



Apple iPhone

\$399 • www.apple.com

Apple's first foray into the smartphone field is a world beater. Boasting the best browser in its class, the iPhone sets the standard for Web surfing. With its unique Visual Voice Mail, checking your messages has never been easier. Combine this with a silky smooth touchscreen interface and you've got one of the best smartphones available. Oh, and did we say that it is a full-fledged 8GB iPod, too? Watching movies and TV shows has never looked better on such a diminutive device. For on-the-go Internet access, the iPhone uses AT&T's EDGE network.

What To Do When . . .

You Lose Your IE, Firefox, Or Opera Bookmarks



When you think about it, the list of favorites, or bookmarks, in your Web browser is really no different than all those icons on your Desktop. Both are sets of shortcuts. But while most of the shortcuts on your Desktop take you to an application or file on your hard drive, the favorites quickly link you to your destinations of choice on the Web.

And, unlike all those icons on your Desktop, your Web favorites are neatly tucked in a menu that resides within your Web browser, not scattered all over your screen.

We depend on our bookmarks to save us the time of entering the URL of a site each time we want to visit it. Many of us rely on our bookmarks every time we go online. So if you open your Web browser and discover those bookmarks aren't there, that's a problem you can't ignore.

Chances are the root of the problem doesn't require a high-tech solution. The bookmarks are somewhere on your system. Here's how to find them.

Internet Explorer

First, let's establish where the Favorites in IE (Internet Explorer)

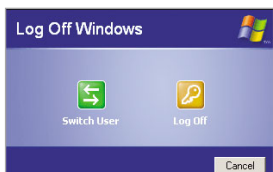
are stored. Of course, you know you can access them through the Favorites menu in IE. But they are stored on your hard drive in the Documents And Settings folder in a folder with your username.

The path looks like this: C:\DOCUMENTS AND SETTINGS\USERNAME\Favorites.

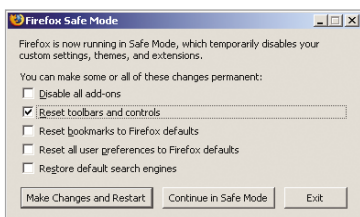
Favorites in IE are tied to User Accounts in Microsoft Windows. User Accounts allow multiple users of the same computer to create their own settings, personal preferences—such as the look of Desktop icons—and their own list of Favorites. So, when someone logs on to Windows using their personal account and then launches IE, he will see the list of Favorites he has created. When another user logs on using her own account, she will see her list of Favorites in IE.

One possible reason that the list of Favorites is missing is that you are not logged on through your User Account. To rectify this, click Start, Log Off, and Switch User and then log on through your User Account. When you do this, Windows will load all your preferences and settings, including your Favorites.

When Favorites aren't accessible through IE, it's possible that the User Account has been corrupted. If this is the case, one solution is to use System Restore (click Start, All Programs, Accessories, System Tools, and System Restore) to roll your



Relocating your Favorites in Internet Explorer may be as simple as switching User Profiles.



To fix a corrupted Bookmark file in Mozilla Firefox, you'll need to restart the browser in Safe Mode.

Chances are the root of the problem doesn't
require a high-tech solution.

system back to a time before the profile became corrupted. By itself, System Restore doesn't change the Favorites list. But because the list is directly tied into User Accounts, which System Restore can affect, this tool is one option for retrieving your Favorites.

You can access a restore point that Windows automatically created, or if you created a restore point before the error occurred, you can use that point. Either way, Windows will revert to a point before the User Account became corrupted.

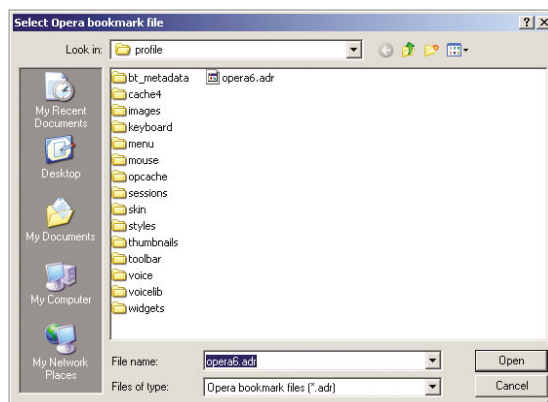
Firefox

When users make the switch from IE to another Web browser, such as Mozilla Firefox or Opera, they need to import their Favorites from IE to the Bookmarks menu of the new browser. Firefox makes it easy to do this: In the Bookmarks menu, choose Organize Bookmarks to open the Bookmarks Manager. Then choose Import from the File menu and select the appropriate source.

Once you've established that the importation of the Bookmarks was successful, then, similar to Internet Explorer, the most likely reason for Bookmarks disappearing is if a file has become corrupted—specifically, the Localstore.rdf file.

To see if this is the case, open the Bookmarks Manager by selecting the Bookmarks menu and Organize Bookmarks. If the Bookmarks appear here, but not in the Bookmarks list, then that confirms the Localstore.rdf file is bad. (This file is found in C:\PROGRAM FILES\MOZILLA FIREFOX\DEFAULTS\Profile.)

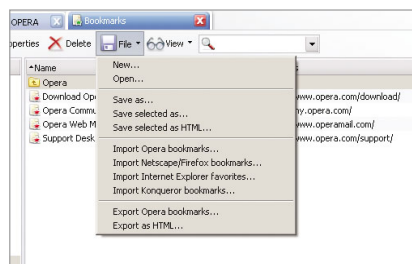
Before you can fix the corrupted file, you'll need to exit Firefox and then restart it in Safe Mode. Click Start, All Programs, and Mozilla Firefox and from this folder choose the Safe Mode option.



Recover lost bookmarks in Opera by finding and opening the Bookmark file.

In the Safe Mode dialog box, select the Reset Toolbars And Controls checkbox and then click Make Changes And Restart. Close Firefox and then restart it in normal mode. When you do, your Bookmarks will hopefully appear in the Bookmarks menu.

Another option is to install the list of backup Bookmarks that Firefox automatically generates and stores on your hard drive. It's easy to import



Opera makes it easy to import Favorites/Bookmarks from other Web browsers—a last-resort option for replacing missing Bookmarks in Opera.

this, but you'll have to dig through a number of layers to find it.

Open the Bookmarks menu and choose Organize Bookmarks. In the Bookmarks Manager window, choose File, Import, and From File and click Next. In the search window that opens, navigate to the C: drive and choose Documents And Settings, [USER-NAME], Application Data, Mozilla,

Firefox, and Profiles. Now you'll see a default folder, such as 60ze1avt.default. Click on this and then open the Bookmark-backups folder. From the list that appears, choose the one closest to the current date. Highlight it and click Open. Your bookmarks will now appear in Firefox.

Opera

Finding lost Bookmarks in Opera is a matter of finding the Bookmark file, named Opera6.adr by default.

Open the Bookmarks menu in Opera and choose Manage Bookmarks. Next, open File in the toolbar and choose Open. In the dialog box that appears after you choose Open, you will see the Opera6.adr file. Highlight it and click Open, and your Bookmarks should appear.

If this option does not work, Opera suggests reimporting your Bookmarks—from itself, oddly enough. You'll need to access the same file as above, but through a slightly different route. From the File menu in Bookmarks, choose Import Opera Bookmarks and then open the Defaults folder. You'll see the Opera6.adr file; highlight it and click Open.

If neither of these options work, then that means the Opera6.adr file is bad, and you'll need to import your Bookmarks from your previous Web browser (open File and choose the import option that corresponds with the appropriate browser). You should also, as Opera recommends, make a backup of your Bookmarks regularly and save it on a disc.

That's good advice regardless of which Web browser you are using, even one that makes automatic backups. If you lose your bookmarks or favorites alltogether, it could take a while to repopulate your list. ■

BY RACHEL DEROWITSCHE

EXAMINING ERRORS

BY JEFF DODD

Problem. A reader reports he cannot access his Cakewalk Pyro program because of an error message.

Error message. Component Sssplt30.ocx or one of its dependencies not correctly registered. A file is missing or invalid.



Solution. This error message indicates that Cakewalk Pyro cannot find a file it needs. We think it was most likely purposefully weeded out of the system as suspicious malware. Although Sssplt30.ocx is not malware itself, the file has long been associated with KeySnatch, a form of key logging spyware. As such, your antispyware or antivirus utility may have identified it as a potential threat and removed it.

To resolve the situation, we recommend that you uninstall Cakewalk Pyro and reboot the PC. When Windows opens again, use your antispyware and antivirus utilities to rid your PC of all harmful code. Then perform a manual search for the KeySnatch parasite. To do so, press CTRL-ALT-DELETE to access Windows Task Manager. Review the list of active processes for a reference to Keysnatch.exe.

If you find it listed there, you need to remove the key logger. Start by highlighting Keysnatch.exe in the list and clicking End Process. Next, open the Start menu, select Run, type **regedit** in the Open field of the resulting dialog box, and click OK. When the Registry Editor appears, locate and delete each of the following keys and values (to delete a key or value, right-click it and select Delete from the pop-up menu):

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\Aboxctl.abox

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\CLSID\{634E2191-2142-4C32-8A9A-D92032CA5F51}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\CLSID\{680C2B92-6FBF-446E-8B32-3BBA73F1004D}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\CLSID\{7A834F35-3908-4FDA-BDAC-28EAB89A0FB3}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\CLSID\{9E563445-B3B2-4A4C-850F-32073A5DF93E}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\CLSID\{B50EE6C3-C280-47F5-B73F-D624A2980E5D}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\CLSID\{D4F6D70A-ECA7-4D42-AAEC-DAD4E26889E1}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\CLSID\{E2A1DA8F-FB3E-4E4A-8DF6-BC54AF4F2B7B}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{083E2157-26B7-4A35-92DF-11D886ED88CE}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{1A23C59A-8C62-4860-A2FE-FC3940E8158C}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{330849E8-B164-474C-9F09-0FE635D36C3C}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{3923042B-2C35-4910-8711-4E0712B8E7C0}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{48372215-470C-4108-B9B3-6DE0EA8A6210}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{77190304-5E62-46B2-A556-599361FB7155}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{A368E682-63C3-4A6B-90DF-D36F1F94B68F}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{B538D830-1F02-4C5E-A881-A442E48E6310}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{DF329552-2E33-45DD-B529-F1A79C5C14D6}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\INTERFACE\{FDF66BEA-FEC0-4FE5-B6F3-DB416F6F7CB9}

HKEY_LOCAL_MACHINE\SOFTWARE\CLASSES\TYPELIB\{03F7CB5F-9E40-4B74-A3ED-7DBEAB01C6C}

HKEY_LOCAL_MACHINE\SOFTWARE\MICROSOFT\WINDOWS\CURRENTVERSION\UNINSTALL\KEYSNATCH\Displayname

HKEY_LOCAL_MACHINE\SOFTWARE\MICROSOFT\WINDOWS\CURRENTVERSION\UNINSTALL\KEYSNATCH\Uninstallstring

Now, close the Registry Editor. Next, locate and delete these files: Abox.ocx, Ccrpftv6.ocx, Install.log, Keyboardguardian.lnk, Keysnatch.exe, Keysnatch.txt, Readme-pdf.lnk, Readme-text.lnk, Readme-worddocument.lnk, and Sssplt30.ocx. Delete the PROGRAM FILES\Keysnatch folder, also.

Once you've ridded your system of malware, take a minute to perform other maintenance routines, such as scanning the hard drive for errors, uninstalling unwanted software, and installing whatever updates are available for your copy of Windows. Now, your system is all but ready to accept a new installation of Cakewalk Pyro (and thus a fresh version of Sssplt30.ocx).

The last step before launching the reinstall is to review the help files for your antispyware and antivirus utilities and, if possible, configure them to ignore Sssplt30.ocx. Doing so prevents your security utilities from tampering with Cakewalk Pyro's performance. When you finally get Cakewalk Pyro up and running, you should not see the error anymore. ■

Problem. When a reader boots his computer and tries to log in, he receives an error message and the computer reboots. The error persists in Safe Mode. He does not want to reformat his hard drive or reinstall Windows.

Error message. Lsass.exe. System Error. An invalid parameter was passed to a service or function.

Local Security Authority Service



SYSTEM ERROR

Solution. Lsass.exe refers to the Local Security Authority Service, which governs user authentication and security. If the file remains corrupted, as we think it is, there's no way to get into Windows.

The good news is that the problem can be fixed. The surest solution is to reformat the hard drive and reinstall Windows, but you don't want to do that. An alternative solution exists, but the process is complex and, depending on your system, may not work. So keep your fingers crossed and pay strict attention to the following instructions.

Locate a Windows XP installation CD. Then, access the BIOS (Basic Input/Output System) Setup on your computer by pressing the specified key—usually DELETE, ESC, or F1—during the boot. When the BIOS Setup appears, locate the boot setting and tweak it so the optical disc drive is configured as the primary boot drive. Save your change and exit the BIOS Setup.

Next, insert the WinXP installation disc and reboot. Press any key to boot from the CD. You'll have the option to reinstall Windows or launch the Recovery Console. Press R to do the latter. Follow the on-screen instructions to log on to your current WinXP installation (press ENTER if you don't know your administrator's password).

A DOS prompt will appear. Type the following commands at the prompt. Press ENTER after each command and press Y to verify your changes. (NOTE: We assume C:\Windows as the default location for your WinXP installation. Modify the commands accordingly if your copy of WinXP is installed on another drive or in another directory.)

```
cd \windows\system32\config
rename system system.bkp
rename software.bkp
rename sam sam.bkp
rename security.bkp
rename default default.bkp
copy c:\windows\repair\system
c:\windows\system32\config\system
copy c:\windows\repair\system\
software c:\windows\system32\config\
software
copy c:\windows\repair\system\sam
c:\windows\system32\config\sam
copy c:\windows\repair\system\
security c:\windows\system32\config\
security
copy c:\windows\repair\system\
default c:\windows\system32\config\
default
exit
```

The computer will reboot after the last command. Let it boot from the hard drive and open My Computer. In the My Computer window, click Tools and Folder Options. On the View tab of the resulting dialog box, select the Show Hidden Files And Folders option. Deselect the Hide Protected Operating System Files (Recommended) option, clicking Yes when asked to confirm the change. Click OK to continue.

Back in the My Computer window, locate the C:\WINDOWS\System Volume Information or C:\System Volume Information folder (only one of these folders will be on your computer). Right-click the System Volume Information folder and select Sharing And Security from the menu. On the Sharing tab of the resulting dialog box, select both Share This Folder On The

Network and Allow Network Users To Change My Files. Abbreviate the Share Name to SysVolInfo and Click OK. Repeat this maneuver if you receive an error; a second time should do it.

Next, open the System Volume Information folder. You'll see one or more _restore folders inside. Double-click any _restore folder that predates the current date (click View and Details to see when a folder was modified). The resulting folder will contain numerous RP (Restore Point) folders. Double-click the most recent one and open the Snapshot folder. Hold down the CTRL key and click each of the following files in the resulting window: _registry_machine_sam, _registry_machine_security, _registry_machine_software, _registry_machine_system, and _registry_user_.default. Release the CTRL key and right-click the group of highlighted files. Select the Copy option, navigate to the C:\WINDOWS\Temp folder, and paste the files inside.

Reboot and press any key to boot to the installation CD. Access the Recovery Console. At the command prompt, enter these commands:

```
copy c:\windows\temp\_registry_
machine_software c:\windows\
system32\config\software
copy c:\windows\temp\_registry_
_machine_system c:\windows\
system32\config\system
copy c:\windows\temp\_registry_
_machine_sam c:\windows\system32\
config\sam
copy c:\windows\temp\_registry_
machine_security c:\windows\
system32\config\security
copy c:\windows\temp\_registry_
user_.default c:\windows\system32\
config\default
exit
```

Let the computer boot from the hard drive. When Windows opens, all of your old data files, programs, and settings should be in place. And with any luck, the error will be gone. ■

Have questions about an error message you've seen? Send us your message (errormessages@smartcomputing.com), and we'll try to decipher it. Tell us what version of Windows you're using, give the full text of the error message, and provide as many details in your explanation as possible. Volume prohibits individual replies.

FAST FIXES

Adobe Photoshop Lightroom 1.2

Problem: Adobe Lightroom 1.1 lacked full support for some cameras, such as the Canon EOS 40D and the Olympus EVOLT E-510. Version 1.1 also had several small bugs, such as problems with the grid display in Windows Vista and inaccurate noise reduction for some cameras' image sensors.

Resolution: Download the Adobe Lightroom 1.2 update from Adobe's Web site. Go to www.adobe.com, point to Downloads at the top of the page, and click Updates. Under Featured Updates, locate the listing for Adobe Photoshop Lightroom 1.2 Update and click the Windows link under the update description. On the resulting page, click the Proceed To Download button in the File Information box. On the following page, click the Download Now button. When prompted, choose to save the file to your hard drive. Before you install the update, back up your Lightroom library. Check the Lightroom documentation if you need help backing up the library. Make sure you select the Test This Database For Corruption checkbox when you use the program's backup feature. After you've downloaded the update and backed up your Lightroom library, locate the file you downloaded (LTRM_WWEFG_win_1_2.exe). Double-click the file to launch the installer. Follow the installation instructions on the screen.

www.adobe.com

Security Update For Outlook Express For Windows XP

Problem: Microsoft has discovered a security hole in Outlook Express that could let an attacker gain control over your computer by executing remote code.

Resolution: Install a 771KB Security Update. To download the file, go to support.microsoft.com and type

KB941202 in the Search Support (KB) field on the right side of the screen and press ENTER. From the resulting list, click MS07-056: Security Update For Outlook Express And Windows Mail. On the next page, click the link under IT Professionals. You will then see a Security Bulletin about the problem. Locate Windows XP Service Pack 2 on the Affected Software chart and click the corresponding link for Microsoft Outlook Express 6. On the resulting download page, click the Download button in the blue Quick Details box. When prompted, choose to save the file to your hard drive. After the download is complete, locate the file you just downloaded and double-click it to start the installation. Follow any instructions on the screen to complete the process. When it is finished, restart your computer.

support.microsoft.com

Cumulative Security Update For Internet Explorer 7 For Windows XP Service Pack 2

Problem: Microsoft has identified several problems in IE7, including one that could let an attacker gain control over your PC after you use IE to visit a Web page with malicious code.

Resolution: Download an 8.3MB update from Microsoft's Web site. This update resolves the security problems with IE7. Go to support.microsoft.com and type KB939653 in the Search For (KB) field and press ENTER. From the resulting list, choose MS07-057: Cumulative Security Update For Internet Explorer. Next, click the URL under IT Professionals. Scroll down to the Affected Software chart and find the Internet Explorer 7 section. The first item under Internet Explorer 7 is Windows XP Service Pack 2. Click the Windows Internet Explorer 7 link to the right of Windows XP Service Pack 2. This will display the download page for the update. Click the Download

button in the blue Quick Details box. When prompted, choose to save the file (IE7-WindowsXP-KB939653-x86-ENU.exe) to your hard drive. When the download is complete, locate the file and double-click it. Follow any instructions on the screen to install the update. Then restart your computer.

support.microsoft.com

FIX OF THE MONTH

Security Update For Word 2002

Problem: Microsoft has found a security problem in Word 2002 that can allow an attacker to run arbitrary code on your system when you open a file that has been modified with malicious content.

Resolution: Download and install a 5MB Security Update from Microsoft. Go to support.microsoft.com and type KB942670 in the Search Support (KB) field and press ENTER. In the results, click Description Of The Security Update For Word 2002: October 9, 2007. On the next page, click the link under IT Professionals. This will load the Security Bulletin pertaining to this vulnerability in Word 2002. In the Affected Software chart, click the Microsoft Word 2002 Service Pack 3 link to visit the download page for the update. Click the Download button in the blue Quick Details box. When prompted, choose to save the file to your hard drive. Locate the file you downloaded, which is named Officexp-KB942670-FullFile-ENU.exe, and double-click it. This will launch the installer. Follow any instructions you see on the screen and restart your computer after the installation is complete.

support.microsoft.com

Q & A

Need help with your hardware or software? Looking for simple explanations on technical subjects? Send us your questions!

Get straight answers to your technical questions from *Smart Computing*. Send your questions, along with a phone and/or fax number, so we can call you if necessary, to: *Smart Computing* Q&A, P.O. Box 85380, Lincoln, NE 68501, or email us at q&a@smartcomputing.com. Please include all version numbers for the software about which you're inquiring, operating system information, and any relevant information about your system. (Volume prohibits individual replies.)



Q I have a SanDisk Cruzer Titanium 2GB thumb drive. I use it at home, and it works great. Lately I've been trying to use it to move files to and from work, but Windows isn't recognizing it. I've thought about reformatting the drive, but I've heard conflicting recommendations about that. Both computers are running Windows XP Professional.

A There are several reasons why your drive may not be usable at work. Before we get into any specifics, you'll want to talk with whomever is responsible for your employer's network. Many IT departments frown upon personal devices being used with their computers.

Many companies are concerned about data loss through personal devices; iPods, USB thumb drives, even CD-ROMs have been used to take data home that is supposed to stay secure on the company's network. Because of this, many companies disable the USB ports on the computers they issue to employees. If this is the case, you'll have to have your IT staff grant you an exception to this policy.

If your company doesn't disable USB ports, there may be a problem with the USB port itself. Try a different USB port on your computer and see if the drive is visible. Usually when you connect a thumb drive under Windows XP, a small balloon will pop

up in your System Tray (at the bottom right of your Desktop) saying "New Hardware Found." After a few seconds, it will display the make and model of your thumb drive. When it has completed connecting to your thumb drive, there will be a new icon in your System Tray with Safely Remove Hardware as its tooltip. If you don't see this when you use a different USB port, you'll need to talk to your IT staff about replacing it if possible.

Next, you'll want to see which drive letter Windows has assigned to the thumb drive. Every drive that your Windows computer uses is assigned an alphabetical letter. First click Start, Control Panel, and Performance And Maintenance. Next click Administrative tools, double-click Computer Management, and select Disk Management (in the Storage category). Your computer's hard drive is usually assigned the drive letter C:, and you'll want to look for any disk that doesn't have a drive letter assigned to it. What often happens in a corporate environment is that your thumb drive expects to use a specific drive letter that is in use by a different disk, such as a mapped network drive or other shared resource.

Once you've identified your unlabeled disk, right-click it and select Change Drive Letter And Paths. Click Add and then assign the disk an unused drive letter. Click OK, and you should now be able to access your thumb drive through Windows Explorer.



Hardware

Q When Vista was first being developed, I remember hearing a lot of talk about its ability to take advantage of flash drives. But I can't find out much about these drives other than the small USB devices.

A Today's hard disk drives are marvels of technology and engineering. Although

the underpinnings of their design hail back several decades, they've been incrementally improved to the point that they can store incredible amounts of data in a reliable fashion. Despite this progress, several vendors are experimenting with alternatives that offer increased performance and improvements in energy usage.

The rumblings
you heard
about Vista
taking
advantage of
flash drives
were likely
referring to
the operating
system's
increased
compatibility
with hybrid
drives.

Traditional hard disk drives have three major elements: magnetically sensitive platters that store data, read/write heads that recognize magnetic patterns on these platters, and circuitry that converts these patterns into digital data that a computer can use. As we previously mentioned, this basic paradigm hasn't changed in decades, but that doesn't mean time has stood still. Platters in modern disk drives spin at up to 15,000rpm, and the density of data stored on them is approaching the limits of materials science. As the capacity of these disk drives has increased, they've required a corresponding increase in the speed at which the read/write heads can be moved to a different location on the platter.

Although hard disk drives are a mature technology, they do have some fundamental weaknesses. The first is fragility. The platters on a disk drive spin constantly, and this can result in a failure in the disk drive's motor. In addition, the read/write heads float on a cushion of air just above the platter. A sudden impact can mean that the head will impact on the surface of the platter, often with catastrophic results. The second weakness is energy consumption. Since the platters are constantly spinning, they're wasting electricity when the disk is idle. Finally, data access from a disk drive is slower than data retrieved from system memory. It takes a few milliseconds for the read/write head to move across the platter, and a few more seconds for it to actually read the data.

To compensate for these weaknesses, drive manufacturers have come up with two primary technologies: hybrid drives and SSDs (solid-state drives). Unfortunately, each of these technologies has drawbacks of its own.

Hybrid drives attempt to improve both energy consumption and data access speeds. A hybrid drive is very similar to a normal disk drive. It has platters, read/write heads, and the usual circuitry we've come to expect. But in addition, it also includes some flash (solid-state) memory to store frequently used data. This is nothing new; most modern drives include a small memory cache that holds recently accessed data.

Where hybrid drives differ is that their memory cache uses nonvolatile chips. This means when your computer is turned off, the data is retained.

In addition, this nonvolatile memory cache is much larger than that which is used on a traditional disk drive, usually 1GB or more compared to 16MB for a regular disk drive. Using a larger cache is what gives the hybrid drive its second advantage, power saving. As we mentioned, the platters on a traditional disk drive spin constantly, draining your notebook's battery or simply wasting electricity. A hybrid drive is designed to only spin up its platters when data is requested. With a large nonvolatile cache, the need to spin the platters is further reduced. The end result is a drive that uses less power and, in many cases, accesses data faster; bootup times for operating systems such as Vista that are designed to take advantage of hybrid drives are much faster than booting from a traditional disk drive. These two advantages are particularly helpful with notebook computers, where power consumption is always a concern and where traditional disk drives have often been slower than those used in desktop PCs.

Solid-state drives take this a magnitude further. Instead of using platters, solid-state drives use nonvolatile flash memory in place of spinning platters. Although many solid-state drives mimic the form factor of a traditional hard disk drive, this is only so that they can be used seamlessly in a PC. The drive's innards are completely different. The result is a drive that uses less power and provides faster access to data. The downside is the cost: SSD drives are far more expensive than HDDs, sometimes as high as \$30 per gigabyte.

The rumblings you heard about Vista taking advantage of flash drives were likely referring to the operating system's increased compatibility with hybrid drives. Now that Vista is in general use, hybrid drives have the potential to improve usability especially in notebook computers. Microsoft now refers to supported drives as ReadyDrives. Hybrid drives are currently priced at a premium compared to traditional HDDs, but if they become

widely adopted by OEMs (original equipment manufacturers), they should see a price drop. SSDs are so expensive that until they become

the de facto standard for servers and enterprise storage, most consumers will find their cost prohibitive.



Q For the past several months, my Averatec 3260 notebook computer, running WinXP SP2 (Service Pack 2), allowed me to use Nero 6 to write CD±R discs and DVD±R discs. In the meantime, Microsoft had regularly been updating Windows without my permission or consent.

Recently, during a DVD writing session on an external Sony dual-layer burner I always use for DVDs, I got the message UNKNOWN FORMAT, despite successfully writing to another blank disc from the same package the day before. Also, ever since, the Averatec's internal DVD burner does not recognize any blank media. I believe it is the matter of new files downloaded by Microsoft which interfere and mess with all that sophisticated software, but I'm at a loss.

A You appear to have a few problems here, so we'll take them one at a time. To begin with, Windows Automatic Updates are under your control. At the most automated setting, WinXP (and Vista) will periodically check with either the Microsoft or Windows Update sites to check a list of available updates against what you have on your computer, will download the updates, and install them for you. We're not certain whether or not your particular problem was caused by a Windows Update, but you can modify Update's behavior.

In WinXP (both Home and Pro versions), you must be logged on as an Administrator to make these changes. Open Control Panel (click Start, Settings, and Control Panel) and double-click the System Icon (in Classic view). When the System Properties dialog box opens, click the Automatic Updates tab. Under Automatic Updates, you'll see four choices: Automatic; Download Updates For Me, But Let Me Choose When To Install Them; Notify Me But Don't Automatically Download Or Install Them; and Turn Off Automatic Updates.

In all versions of Windows Vista, you must be logged in as an Administrator to make

these changes. Click the Start button, All Programs, and Windows Update. In the left panel of the Windows Update dialog box, click Change Settings. Your choices are Install Updates Automatically; Download Updates, But Let Me Choose Whether To Install Them; Check For Updates, But Let Me Decide Whether To Download And Install Them; or Never Check For Updates.

There are several things you can do to attempt to restore your system to the state it was in when everything worked to your satisfaction. First, if you created a System Restore Point prior to installing the update you think caused your problem, roll your system back to when it did what you expected it to do. To find System Restore in WinXP, click Start and Performance And Maintenance (in Category view). Then, click System Restore under See Also on the left side of the window. Windows will walk you through the process of restoring your computer to an earlier time.

Next, check with the manufacturer of your computer at www.averatec.com to see if there have been any hardware driver updates that may bear on this problem. However, there is one concern we have: Your specific model number isn't listed under the 3200 series at the company Web site—the current list jumps from 3255 to 3270. You may have to phone the company for more assistance, using the numbers at the bottom of the Driver Downloads page.

Also, Nero software for doing all manner of things to CD-R and DVD-R discs, is now in version 8. Check out your update/upgrade options at www.nero.com.

Finally, try uninstalling Microsoft's automated update that occurred just before your system stopped responding properly to recordable media in your internal or external drives. All Microsoft updates, patches, and hotfixes are listed in Add Or Remove Programs (available through the Control Panel). Make sure there's a check mark in

the Show Updates checkbox in the Add Or Remove Programs window. If there have been additional updates since the one you suspect of being the culprit, remember to uninstall all of the updates that have arrived since, in the reverse order of their installation. In other words, uninstall the most

recent first and work your way back, one at a time.

When your system is clean, or when your drives and the software you use work and play well together, go back to System Restore (see above) and create a restore point to use if something similar happens in the future.



Hardware

Q I have a Dell Latitude D505 running WinXP Home Edition with 512MB, and it seems very slow. I've reinstalled Windows, done a low-level format of the hard drive, and made sure not to install too many applications. I bought this laptop used for a reasonable price in the hopes that I could use it instead of my desktop computer, but it seems so much slower. Are there any upgrades I can do to make it more usable, especially for gaming?

A With portability comes compromises, and notebook computers have to make numerous structural compromises that make them perform much slower than desktops of the same vintage.

Upgrading the hardware on a notebook computer is more challenging than on a desktop PC. Desktop PCs are designed to be upgrade-friendly; access to drives, graphics cards, CPUs, and memory is usually just a matter of taking off a side panel and installing a replacement. With a notebook computer, upgrading hardware is usually limited to adding memory and a larger (or faster) hard drive.

The hardware that limits your D505's performance is fourfold: CPU, memory, hard drive, and graphics card. According to our research, your CPU is an Intel Celeron running at 1.2GHz. Unfortunately, upgrading your CPU isn't a realistic task since the newest CPUs use a different chipset on the motherboard.

However, your notebook can use more memory than you currently have installed. The D505 can use up to 2GB of RAM. There are two memory slots in the notebook, and more than likely each slot has a 256MB chip in it. You don't have to have matching memory chips in your Latitude, so you can upgrade the memory as your budget allows. Upgrading memory is usually the most beneficial upgrade you can

perform. Increasing the amount of memory in your notebook results in less use of your hard drive, and for games, this can be crucial. Prices for 2GB of memory from reputable online vendors such as Crucial.com are roughly \$200.

Notebook hard drives are also a performance bottleneck. The D505 uses a Fujitsu hard drive that spins at 4,200rpm and has a 2MB cache. In contrast, most desktop hard drives spin at no less than 5,400rpm and usually 7,200rpm. This means that retrieving data on your notebook is approximately 40% slower than a desktop PC. The smaller cache also hurts performance, since it forces your notebook to pull data off the disk itself instead of the faster cache. In contrast, desktop disk drives now have memory caches up to 16MB in size.

Upgrading your notebook's hard drive is possible, though notebook drives are expensive, especially the high-performance drives. Upgrading to a 60GB, 7,200rpm drive with an 8MB cache will cost approximately \$70 from an online retailer such as Newegg.com, but we wouldn't recommend a hard drive upgrade unless you need the additional storage space.

Where entry-level notebooks like the D505 really suffer is in their graphics cards. Your notebook uses the 82852/855GME, an on-board, nonupgradeable Intel chipset. These cards use some of your notebook's system memory up to a maximum of 64MB. While these cards are fine for most uses, they have a hard time delivering acceptable frame rates with many graphically intensive games.

Our recommendation would be to decide how you really want to use the notebook. If you're hoping for a great gaming experience, no upgrades for the D505 will really be of much use. A desktop computer just has too many advantages. If you want to improve general performance, nothing beats a memory upgrade.

Frequently Asked Questions

Answers to users' most common questions about PCTV

There are no exotic requirements for PCTV devices—they are self-contained and operate using their own onboard firmware.

FAQ Is there a device that will let me watch my cable TV over the Internet? How does it work?

There are numerous devices that will let you watch cable television shows on your computer across your LAN (local-area network) or Internet connection. Some examples include the Slingbox product family from Sling Media (www.slingmedia.com) and the Sony LocationFree Base Station (www.sonymstyle.com), among others.

A PCTV device basically installs in-line between your cable box's or satellite receiver's output and your television's input. The device is also attached to a port on your Ethernet switch or router. Television signals are then processed into network packets and placed onto your LAN, and any PC with the corresponding software installed can then receive and play the TV signals. If the LAN is connected to the Internet, you can also watch your TV shows anywhere in the world where you have an Internet connection.

The trickiest part of installing a PCTV device is making the two connections at the same location in your home. Few people have their broadband modem and router at the same place where their audio/video source is located. Some users run a separate Ethernet cable through the walls to make that connection discretely. Others opt for a wireless PCTV device that communicates with your wireless router.

There are no exotic requirements for PCTV devices—they are self-contained and operate using their own onboard firmware. But any PC on which you plan to watch television should meet or exceed the recommended system requirements for the PCTV device's software. A wired LAN should also support 100Mbps (megabits per second) or faster, which is no problem for a standard 10/100 Ethernet LAN. If you opt for a wireless LAN connection, be sure to support the 802.11g wireless standard or faster.

FAQ Can I watch one channel on my standard television while watching a different channel through the PCTV device? Can I watch television in HD (high-definition)?

In most cases, PCTV devices do not contain their own independent tuners, so they will only broadcast the television signal that is selected on the cable box or satellite receiver.

Many homes have a separate cable box or satellite receiver in another room. Some users overcome this limitation by installing the PCTV device at the secondary location. This allows PC users to watch their television shows using the secondary cable box or satellite receiver without disturbing normal family viewing.

You can certainly find PCTV devices that will handle high-definition signals. But like many televisions, there's a difference between "HD" and "HD-ready." If you select a PCTV device to use with HD signals, be sure that the device can support HD broadcasts out of the box. Otherwise, you may need to purchase a separate HD adapter, which will raise the cost of your PCTV device substantially. For example, the \$229.99 Slingbox PRO can support HD television, but you need to buy a separate adapter to connect the HD source to the Slingbox device (another \$49.99).

FAQ How do I control the cable box from the PCTV panel?

Remote controls are based on IR (infrared) signaling, and PCTV devices typically use a simple IR blaster adapter, which provides two IR transmitters that you can locate in proximity of your cable box or satellite receiver. Once you tell the PCTV player software what type of receiver box you have, you can simulate the remote control's behavior through the IR blaster, turning the receiver and TV on and off, changing channels, changing volume, and adjusting many other features remotely through the PCTV player software. This is what lets you control the picture from anywhere on the LAN or the Internet. ■

Are you having trouble finding a product or getting adequate service from a manufacturer? If so, we want to help solve your problem. Send us a description of the product you're seeking or the problem you're having with customer service. In billing disputes, include relevant information (such as account numbers or screen names for online services) and photocopies of checks. Include your phone number in case we need to contact you.

Letters may be edited for length and clarity; volume prohibits individual replies.



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Cold & Prickly Support & When A Renewal Isn't A Renewal At All

I read a Smart Computing review of ShadowBack in the July 2006 issue and decided to try it out. I downloaded the trial and found it met my needs, then ordered, paid, and promptly received an email with downloading instructions. When I tried to launch the software, however, I got a message saying that the trial period had expired. I have contacted the company behind ShadowBack, Warm And Fuzzy Logic (W&FL), on multiple occasions to get the software to work but without success. What can I do?

John J. Herring
Lady Lake, Fla.
.....

We've covered an issue before involving a reader who was having trouble with ShadowBack and W&FL. Like John, the reader was unable to install the software and couldn't seem to get through to the company. Because this was the second time we received a complaint involving W&FL, we wasted no time in calling our contact. That was when we discovered that the phone number they had given us had been disconnected. We sent an urgent message to W&FL's support email address.

The following day, a support representative contacted John and also emailed us to say that the communication breakdown was due to an internal software problem. A few days later, John reported that all contact with the company had ceased. At John's request, we sent W&FL another email asking for a full refund. More than a week later, our contact emailed us both to say that "a major email failure" was to blame for the lack of response and that they would refund John's money immediately. Approximately two weeks later, John had his money back.

After dealing with this company twice and leaving both encounters with a less than warm and fuzzy feeling, we can't recommend

ShadowBack or any other products produced by W&FL. Until the company can get some better internal software and turn around the support (or lack thereof) situation, steer clear.

While trying to solve a hardware problem, I came across TouchStone Software's DriverAgent site. The free DriverAgent scan informed me that I had a "bad" video driver, but I had to subscribe to the service to proceed. I paid the fee, but when I went to install the driver, a pop-up message informed me, "The driver being installed is not valid for this computer." DriverAgent's support told me to try the alternate fixes listed on the site, but because the first resolution didn't work, I wanted a full refund; I don't want to try several different fixes. The support agent said it is against TouchStone's policy to refund renewals, but this wasn't a renewal. I had used the service once in the past with similar results, but I cancelled it. Can you help me get my refund?

Name and location withheld
.....

Smart Computing has recommended DriverAgent before, so we passed the issue along to our contact. Almost immediately, we heard back from TouchStone's president and CEO who told us he was looking into the matter personally. According to TouchStone, the reader had indeed subscribed to DriverAgent more than a year ago, used the service just once, and requested and received a refund. The second time our reader tried the service, he again used the service just once. TouchStone told us that renewal offers (for a reduced rate) are only offered to customers with recently expired subscriptions. The reader didn't meet the criteria to receive the renewal rate but was inexplicably offered it anyway. Because this was a unique circumstance, and the reader clearly hadn't used the service, TouchStone made an exception and granted the refund. Less than a month after the initial complaint, the refund had appeared in the reader's bank account. ■

Turning Over A New Leaf

The end of the year in our household is replete with the promise of change. We spend the season feasting and toasting, while promising to do less of both in the coming year. Each year, I also spend part of the holiday season doing a little proactive tech support—reinstalling my OS (operating system) and all my applications from scratch. It might sound like a feeble way to ring in the New Year, but the value of replacing a few hours' revelry with some diligent caretaking needs no further demonstration than each January's combination of credit card balances and system performance. And unlike the annual "gym and salad" routine, we can all deliver on this change.

Just as earnest commitments to better health and greater prudence slip away over time, computers invariably get more sluggish and unreliable as each year progresses. Unnecessary and outdated files, the constantly shifting bramble of patches and updates, plus tons of other unidentifiable junk clog up our systems. As this material accumulates, it makes the operating system's job of coordinating everything that much more complicated. Applications and devices have to battle an ever-increasing pool of competitors for system resources. And it takes me longer just to remember where everything is, which somehow gets harder with each passing year.

Regular upkeep is the first way to alleviate these problems, which is why I harp at length about spyware sweeps, Registry scanners, and general system maintenance. These are important practices and provide breathing room, but even they won't hold system creep at bay forever. Every once in a while (for me, once a year) you just need to back up all your data, collect all your installation files and application discs, and start over from scratch.

First, back up everything. Backups sound deceptively simple, but they're the most critical step. If you can collect all your data, along with all your installation files and discs, you can re-create anything. But if you miss some vital files or discover too late that you don't have your mouse drivers, there won't be anything you can do to recover them. You can use Microsoft's Backup And Restore utility, which provides a wizard for selecting which data files and Windows settings to

back up, saving the whole package to removable media and later restoring it all in a single step. I can be obsessively paranoid about backups, so I take some extra time browsing my hard drives, adding anything else I want to keep (like installation downloads and driver updates) and placing music files and other media on their own data DVDs.

Next, collect your Windows disc and all your application CDs. If you have a system restore disc from your system's manufacturer, getting back to an original state is easy. Just follow your documentation's instructions to boot from the disc

and restore the factory setup. If you have a regular Windows installation disc, disconnect all but your most essential hardware (monitor, keyboard, mouse) and reinstall the OS. Boot from the Windows CD, reformat your main partition, and create a clean installation. After setting up Windows, reinstall the drivers for your core hardware (motherboard, graphics adapter, sound card) and connect each of your peripherals one by one. Then install all your applications from their installation CDs or from downloaded executable files. Finally, restore all your data and change all your settings back to their preferred states. If you used Backup And Restore, just

point to the backup location and walk through the wizard again. If you saved some files on your own, use Windows Explorer to move them back to their original locations.

Once you have the steps down, you can usually have the entire process taken care of, from start to finish, in an afternoon. Can you think of a better way to spend some of that holiday downtime, hiding from dirty dishes and "some assembly required" commitments? ■

BY GREGORY ANDERSON

Gregory Anderson is a regular contributor to Smart Computing and several other technology publications. He keeps a sharp eye (with the help of thick glasses) on computing trends and enjoys working with geeks of all stripes—most of the time. Share your year-end tech rituals at gregory-anderson@smartcomputing.com.





MyVu Personal Media Viewer

\$199.95 (Universal Edition)
MyVu
www.myvu.com

For years, various companies have attempted to produce video-playing eyewear, and for years, poor video playback quality and shoddy construction left me a bit jaded about the future of these devices. When MyVu sent me its Personal Media Viewer, I was prepared to be disappointed yet again—but MyVu has produced a winner.

These video glasses actually work as advertised.

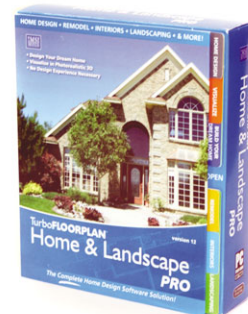
Slip them on and it's like watching a private screen float in front of your eyes. You just select the cable that matches your video output device (the Universal Edition includes cables for various types of personal media players) and plug one end into the device and the other into the control unit that connects to the glasses. Insert the earbuds

that dangle from the headpieces, and you're

treated to high-quality video and audio. In my case, I used the MyVu Personal Media Viewer to watch shows I had downloaded to an iPod. The lightweight design made it very comfortable to use the glasses for extended periods, and it was possible to see the screen and still keep tabs on what was happening around me.

Video glasses are enough of a novelty that you're sure to get some stares—and Geordi La Forge comparisons are inevitable—but the MyVu glasses are sleek and very easy to use. Business travelers with notebooks who work on sensitive material during flights would find MyVu's Personal Media Viewer provides an excellent way to get work done with some privacy. ■

Ron Kobler



TurboFLOORPLAN Home & Landscape Pro 12

\$129.95 | IMSI Design
www.imsidesign.com

This program can help transform your ideas for the perfect home into a detailed building plan. TurboFLOORPLAN's vast array of features will suit architects and builders, but I was happy to find the software isn't beyond the scope of the average user. A House Builder Wizard helps you create a basic structure. You then add walls, furniture, landscaping, lighting, and much more. You can customize items by changing their color and even the materials they're made of. You'll need to spend some time discovering all of the features of this program, but I think you'll find that it's an effective tool. ■

Tara Simmons



Playaway Audio Book


\$29.99 and up | Findaway | www.playawaydigital.com

The Playaway is a new take on audio books. Unlike digital readers that require you to download material, the Playaway has a book preinstalled. Special features include the ability to set bookmarks and vary narration speed. The unit is smaller than a deck of cards and weighs only 2 ounces, so you can easily carry it in your pocket.

Sign up for a frequent-reader program called Replay and the company will reload your Playaway with a new book of your choice for half price.

I listened to "Marley And Me." The audio was clear and the controls simple to use. Even tech novices will be at ease using Playaway. ■

Ron Kobler



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